Economic Analysis of the Amendments to the Corrective Action Management Unit Rule (Background Document)

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List of Exhibits

Chapter 1: Background on the Amendments and Purpose of the *Economic Analysis*

This Chapter provides the background on the Amendments to the Corrective Action Management Unit (CAMU) Rule and an overview of the purpose and components of the *Economic Analysis* of the Amendments. The Chapter contains the following sections:

1.1 Outline of the *Economic Analysis of the Amendments to the CAMU Rule*

1.2 Background on the Amendments to the CAMU Rule

1.3 Overview of the Approach and the Impacts Assessed in the *Economic Analysis*

More detailed description of the methodology for each component of the analysis is provided in Chapters 2, 3, and 4 of this document. There were no comments specifically addressing the Proposed Rule economic analysis methodology or results. This analysis briefly discusses economics-related comments in the appropriate chapters throughout the document.

1.1 Outline of the *Economic Analysis of the Amendments to the CAMU Rule*

This document contains the following Chapters:

Chapter 1: Background on the Amendments and Purpose of the *Economic Analysis*

Chapter 2: Incremental Costs for Approving a CAMU

Chapter 3: Incremental Impacts of the Treatment and Unit Design Provisions for Permanent CAMUs and Incremental Impacts of the Treatment and/or Storage Only CAMU Provisions

Chapter 4: Potential Change in CAMU Use

Chapter 5: Total Impacts

Chapter 6: Administrative Requirements

Additionally, EPA developed three appendices; Appendices A and B provide background on EPA's collection of approval process cost information which is employed in Chapter 2. Appendix C is a comparison of the Amendments with the 1993 CAMU Rule requirements. The *Economic Analysis* also relies heavily on information in the *CAMU Site Background Document*, which is included in the docket for the CAMU rule and is described briefly below. An overview of the methodology and results from this *Economic Analysis* is presented in the preamble to the final rule.

1.2 Background on the Amendments to the CAMU Rule

CAMUs may be used to consolidate hazardous wastes from various areas at the facility. While one of the chief reasons for CAMU usage is to facilitate more treatment of cleanup wastes in general, wastes placed in CAMUs are not subject to the land disposal restrictions (LDRs) for treatment. In addition, under the 1993 CAMU Rule, CAMUs are not required to meet the existing 40 CFR Part 264 and Part 265 minimum design, operating, closure, and post-closure requirements for hazardous waste units.

A CAMU is one of the many hazardous waste cleanup tools available to a remediation decision-maker. EPA has developed extensive policies and regulations to address the special circumstances of hazardous cleanup wastes. These regulations and policies are intended to preserve RCRA's goal of protectiveness, while providing oversight agencies the flexibility and tools necessary to develop effective site-specific remedies. EPA's regulations and policies include the 1993 CAMU regulation, which is the subject of these Amendments, the "area of contamination" policy, the "contained-in" policy, the "Phase IV Land Disposal Restrictions" treatment standards for contaminated soils, and the regulations for "temporary units." Descriptions of these and other policies and regulations, including references, are provided in the October 1998 Memorandum, "Management of Remediation Waste Under RCRA," EPA530-F-98-026, which is in the docket for this rule. In addition, many of EPA's official guidances and policy statements, as well as rule language, can be found at www.epa.gov/osw/ under either "corrective action" or "clean up."

For general information on the Amendments to the CAMU Rule, contact the RCRA Hotline at (800) 424-9346 or TDD (hearing impaired) (800) 553-7672. In the Washington, DC metropolitan area, call (703) 412-9810 or TDD (703) 412-3323. For more detailed information on specific aspects of the rule, contact Bill Schoenborn, U.S. Environmental Protection Agency (5306W), USEPA Headquarters, Ariel Rios Building, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460, at (703) 308-8483.

The following subsections provide context and background on the CAMU Amendments. The reader is directed to the preamble for the rule, however, for more detailed background on the 1993 CAMU rule and discussion on the particular provisions of the final rule.

1.2.1 Background and Context for the Amendments to the CAMU Rule

On February 16, 1993, EPA published final regulations for CAMUs (58 FR 8658). The CAMU rule provides considerable flexibility to EPA and implementing states to specify design, operating, closure and post-closure care requirements for on-site units used for storage, treatment, and disposal of hazardous wastes and media containing hazardous wastes that are generated during cleanup. The CAMU rule sets forth decision criteria for designating CAMUs that are protective of human health and the environment. The CAMU rule defines wastes ("remediation wastes") that would be eligible for management in a CAMU. Importantly, under the CAMU rule, consolidation or placement of remediation waste into an approved CAMU is not considered "land disposal" and therefore does not trigger RCRA LDRs (§264.552(a)(1)). Thus,

appropriate treatment requirements can be specified by the overseeing Agency on a site- and waste-specific basis. In addition, the CAMU rule provides that consolidation or placement of cleanup wastes into a CAMU does not trigger RCRA section 3004(o) minimum technology requirements (MTRs) (§264.552(a)(2)) for hazardous waste unit design. As a result, the 1993 CAMU rule provides significant regulatory relief and flexibility for cleanup.

The CAMU rule has received broad support from many affected stakeholders. At the time of promulgation of the CAMU rule, however, the rule was challenged. On May 14, 1993, a petition for review was filed with the U.S. Court of Appeals for the District of Columbia Circuit. *Environmental Defense Fund v. EPA, No. 93-1316 (D.C. Cir.)*. The Petitioners were concerned with, among other things, the provisions stating that LDRs, MTRs, and other Part 264 and Part 265 RCRA unit requirements do not apply to CAMUs.

Following this challenge to the CAMU rule, EPA created the Hazardous Waste Identification Rule (HWIR) Federal Advisory Committee (discussed in the Requirements for Management of Hazardous Contaminated Media (HWIR-Media) preamble at 61 FR 18780). As part of the dialogue that prefaced the creation of this committee, which included representatives from environmental groups, regulated industry, the waste management industry, states, and EPA, EPA agreed to re-examine the CAMU regulations in the context of developing regulations (the HWIR-Media regulations) to address the management of hazardous remediation waste during cleanups. The litigation to the CAMU rule was stayed pending the outcome of this rulemaking process. In April 1996, EPA issued the HWIR-Media rule, which was a comprehensive proposal addressing the management of hazardous remediation waste. In this notice, EPA proposed to withdraw the 1993 CAMU rule with the reasoning that the HWIR-Media rule would offer much of the same flexibility as that available under the CAMU rule, but with a more comprehensive and detailed approach to addressing remediation waste issues.

On November 30, 1998, EPA published the final HWIR-Media rule (63 FR 65874). Because of, among other things, commenters' fundamental disagreement with the proposal and EPA's concerns after considering stakeholder comments, EPA decided to promulgate only selected elements of the HWIR-Media proposal, rather than a more comprehensive set of standards. In addition, because the specific provisions finalized in the HWIR-Media rule do not address the basic concerns that the 1993 CAMU rule addresses, EPA chose to leave the CAMU regulation in place.

Following publication of the final HWIR-Media rule and EPA's decision not to withdraw the 1993 CAMU rule, EPA and the Petitioners to the CAMU rule entered into discussions in an effort to settle the CAMU litigation. During these discussions, EPA obtained feedback from the regulated community and the states to help facilitate the settlement process. On February 11, 2000, EPA and the Petitioners reached settlement on the CAMU litigation (the settlement was filed with the U.S. Court of Appeals for the District of Columbia Circuit, and is included in the docket for the rule). The settlement required EPA to propose Amendments to the existing CAMU rule by August 7, 2000, and to issue a final rule by October 8, 2001. See 65 FR 51080 (August 22, 2000) for the proposed Amendments to the CAMU rule.

1.2.2 EPA's Reasons for Amending the CAMU Rule

The Agency believes that the CAMU rule has worked well in practice, resulting in remedies that protect human health and the environment. However, as discussed in Section 1.2.1, to reach settlement on the CAMU litigation, EPA agreed to adopt Amendments to the existing CAMU rule. EPA's decision to enter this settlement was based on a desire to avoid the risks of litigation and the great disruption such litigation could mean for existing and planned cleanups. It also reflects a desire to remove the "litigation cloud" that has deterred the use of CAMUs in the field[1] as well as a belief that the proposals negotiated during the settlement process were reasonable.

The Amendments more specifically define the wastes eligible for management in CAMUs, establish minimum treatment requirements for such wastes, and set minimum technical standards for CAMUs. This is a departure from the 1993 rule, which took a more "performance-based" approach to addressing these issues and left the details of what was necessary to protecting human health and the environment for the Regional Administrator to determine based on site-specific circumstances. It was EPA's view in 1993 that this approach would bring more efficiency and speed to cleanups by replacing the more prescriptive RCRA requirements designed primarily for "process" wastes (also known as "as-generated" wastes) with an approach that allows site-specific decision-making regarding treatment and technical requirements for cleanup wastes[2] managed in on-site units. EPA chose not to impose prescriptive standards tailored to cleanup wastes managed in CAMUs because of a concern that individual sites might present circumstances not contemplated at the time of the promulgation of the rule. EPA feared that such standards might pose a barrier to sensible protective cleanup solutions, engendering the kinds of disincentives to cleanup that the CAMU rule is designed to address.

1.2.3 Substance of the CAMU Rule Amendments

EPA is amending the regulations governing (1) the types of wastes that may be managed in a CAMU, (2) the design standards that apply to CAMUs, (3) the treatment requirements for wastes placed in CAMUs, (4) the information submission requirements for CAMU applications, (5) the responses to releases from CAMUs, and (6) the public participation requirements for CAMU decisions. Each of these areas is discussed in detail in the preamble to the Amendments. The most important provisions in assessing the economic impacts associated with the rule are the treatment and unit design standards for CAMUs. These particular provisions are summarized in Chapter 3 of this *Economic Analysis*.

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[1] See General Accounting Office report, "Remediation Waste Requirements Can Increase the Time and Cost of Cleanups," October, 1997, which is included in the docket for the proposed rule.

[2] The term "cleanup waste" is used in the CAMU rule to express the general concept of wastes that are derived from cleanup. It is not meant as a term of art, nor is it meant to supersede the terms "remediation waste," which is defined at §260.10, or "CAMU-eligible waste," which is in the rule. EPA uses the term "cleanup waste" in the CAMU preamble and in this report when the waste referred to is not necessarily a "remediation waste" or a "CAMU-eligible waste."

Furthermore, the Amendments "grandfather" certain categories of CAMUs and create new requirements for CAMUs used for treatment and/or storage only (i.e., those in which wastes will not remain after closure). Additionally, EPA has developed an approach to state authorization that grants "interim authorization-by-rule" for these Amendments to most states currently authorized for the CAMU rule and expedites the authorization process for states authorized for corrective action but not the CAMU rule.

Additionally, EPA is promulgating provisions from the November 20, 2001 supplemental proposal which allow CAMU-eligible wastes, under certain conditions, to be disposed of in an off-site hazardous waste landfill. These conditions include (1) limitations in CAMU-eligible waste, (2) limitations to placement in off-site hazardous waste landfills only, (3) requirements to meet the treatment standards for all PHCs identified in the waste, with the opportunity for adjustment from these standards based on certain enumerated factors, which are slightly modified for these off-site provisions, and (4) requirements regarding the disposal unit. Please see the preamble for the Final Amendments for a complete discussion of these conditions.

1.3 Overview of the Approach and the Impacts Assessed in the *Economic Analysis*

Under the Planning and Regulatory Review Executive Order 12866 (58 Federal Register 51,735 (October 4, 1993)), an agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

> (A) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
>
> (B) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
>
> (C) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
>
> (D) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that the CAMU rule is a "significant regulatory action" because of novel legal or policy issues arising in the rule. As such, this action was submitted to OMB for review. Significant changes made in response to OMB suggestions or recommendations are documented in the public record. The rule is estimated to have annual incremental costs between $217,000 and $452,000. Therefore, it is not viewed as economically significant under the Executive Order. EPA also performed a bounding analysis to quantify the impacts that could result from the rule affecting overall CAMU usage. However, given the uncertainty associated with this analysis, these impacts are not included in

the total impacts from the rule. EPA's preamble to the Amendments provides an overview of the rule with specific discussions on the provisions of the rule as well as a synopsis of the *Economic Analysis* support materials for the rule.

1.3.1 Overview of the Approach for the *Economic Analysis*

The CAMU Amendment provisions revise the existing CAMU rule. This *Economic Analysis* examines the impacts from these Amendments compared to the existing CAMU rule provisions. This section briefly discusses the framework of the analysis and provides an overview of the baseline and post-regulatory scenarios and the incremental impacts assessed.

The Final Amendments include a provision which allows for alternatives to the TCLP to measure treatment effectiveness for metal bearing wastes. Additionally, these Amendments will allow for physical treatment (such as blending, mixing, and sizing) to occur in staging piles. EPA has added these two provisions since publication of the Proposed Amendments. However, this analysis does not address any potential impacts which may result from these two changes, as they are expected to be minimal. Additionally, EPA is promulgating provisions allowing for disposal of CAMU-eligible wastes in off-site hazardous waste landfills under certain conditions. The potential impacts of these provisions are addressed qualitatively in Chapter 5 of this document.

Framework for the Analysis

The Agency faced two important questions in developing the framework for this analysis. The first was how to define the universe of facilities affected by the rule. The second was how to approach assessing the incremental changes in CAMUs from the baseline to the post-regulatory scenario.

The universe of facilities that potentially could employ a CAMU in remediation and thus could be affected by the rule includes facilities performing cleanups under RCRA corrective action, Superfund, and state cleanup authorities. Over 6,000 facilities potentially can be reached through corrective action authority; this figure does not include Superfund sites or other cleanup sites where CAMUs may be used in the future. Of these 6,000 facilities, the rule would not impose costs on any existing CAMUs that continue to manage wastes in the general manner for which they were approved, or on any facilities that manage their wastes without the use of a CAMU (e.g., they cap with waste in place or send their wastes off-site). The standards would apply to CAMUs that are not subject to the existing standards under the grandfathering provisions. However, attempting to determine the number of facilities, out of this total number, that would require remediation at some point in the future under one of these authorities and would employ a CAMU in the remedy would require significant effort and yield highly uncertain results.

Therefore, EPA considered using existing data on CAMU usage. The Agency first examined the 1993 CAMU Regulatory Impact Analysis (RIA), which was performed in support of the existing CAMU rule. In that RIA, the Agency projected the number of facilities that

would employ CAMUs in the future. That projection was based on the work of expert panels that reviewed, on a facility-by-facility basis, a randomly selected sample of 79 corrective action facilities and determined when CAMUs would be employed in remediation. The impacts estimated for these facilities were extrapolated to the corrective action universe to develop a national estimate of impacts for the CAMU rule. In that RIA, the Agency estimated that the existing rule would result in CAMUs being used at approximately 1,500 facilities, or approximately 75 CAMUs per year over a 20-year period.

However, based on data in the *CAMU Site Background Document*[3] showing actual CAMU usage over the past eight years, the Agency believes the 1993 RIA projections do not represent an accurate forecast of the expected use of CAMUs in the future. These data, discussed in more detail below, show an approval rate of approximately six CAMUs per year. The disparity between the 1993 RIA projections and the actual usage is likely the result of four factors.

- First, the 1993 RIA baseline is very different from the remedial setting that has existed in recent years. Chiefly, the RIA baseline assumed significant excavation and treatment of wastes at corrective action sites, with heavy reliance on combustion technologies and little use of innovative treatment or remedial approaches. These innovative treatment approaches tend to be less expensive than combustion technology, and are much more available and in use than was anticipated in the 1993 RIA. Therefore, the pervasive demand for CAMUs to lower large remedial costs at corrective action sites did not materialize as anticipated in the 1993 RIA.

- Second, due to its timing, the RIA estimates do not include impacts on CAMU use that resulted from various remedial policy developments such as the stabilization initiative, the use of environmental indicators and the Phase IV LDR soil treatment standards. These developments have resulted in increased stabilization of sites and thus less excavation and treatment of wastes. This shift created conditions that reduced the need to rely on CAMUs as much as had been estimated originally in the 1993 RIA. Additionally, the availability of alternatives to CAMUs, such as staging piles and areas of contamination (AOCs), potentially has decreased the use of CAMUs from the rate anticipated in the 1993 RIA.

- Third, given the historical rate at which facilities have progressed through the various stages of corrective action to reach a final remedy decision, the Agency thinks that the CAMU usage projections from the RIA were unrealistically high. The number of final remedy decisions at corrective action sites across the nation

[3] The *CAMU Site Background Document* contains information for 47 CAMUs approved (or near approval) over the period from the promulgation of the 1993 CAMU rule to early 2001. This document includes information on the type of waste managed in the CAMU, treatment being performed in the CAMU, if any, and the unit design criteria for the CAMU.

has never reached 75 per year. Therefore, it would be impossible to have an average of 75 CAMUs approved annually.

- Finally, the Agency believes that CAMU use has been dampened over the past eight years due to the uncertainty surrounding the use of CAMUs that resulted from the CAMU litigation.

For these reasons, the Agency developed a baseline for this analysis through use of the data on existing CAMUs in the *CAMU Site Background Document*. These data were collected from Regional and state site managers for the 47 CAMUs approved to date or near approval under the existing CAMU rule. The data include CAMUs approved at Superfund sites and state-lead sites. For each CAMU, the Agency obtained information on the use of the CAMU at the site, types of wastes managed, treatment required, if any, and unit design. The *CAMU Site Background Document* is included in the docket for the rule.

Using these data, the Agency estimates an annual CAMU approval rate for the past eight years and applies that rate to project CAMU usage in the future. In projecting future use based on historical data, the Agency assumes that the 47 CAMUs are reasonably representative of future CAMU use. This assumption rests on the completeness of the data in the *CAMU Site Background Document*, which contains information on all the CAMUs known to be approved (or, for a few, near approval) to date. Therefore, it provides a sound basis for understanding how the CAMU rule has been implemented to date. For purposes of this analysis, the Agency assumes there will be no new regulations or policy initiatives that would affect CAMU usage in the future. (Note: One exception is the anticipated change is the removal of the uncertainty associated with the CAMU litigation. The Agency assesses the impacts from this change on the CAMU usage rate as a part of the analysis of the incremental impacts of the rule.)

These historical data also helped identify any potential differences in the treatment and/or unit design of a CAMU approved under the existing rule (baseline case) as compared to a CAMU approved under the Amendments (post-regulatory case). As discussed in more detail below, the Agency used the information on the 47 existing CAMU remedies to assess consistency with the provisions in the Amendments. This assessment involved a facility-by-facility comparison of the existing remedy (baseline case) with the requirements under the Amendments (post-regulatory case). In such an approach, the Agency again assumes that these actual CAMU remedies selected in the past are reasonably representative of CAMU remedies that would be selected under baseline conditions in the future. However, the Agency believes this assumption to be sound for the same reasons stated above regarding CAMU usage. EPA thinks these remedies are the reasonable outcome of the existing CAMU regulations implemented within the context of standard remedial goals for cleanup.

Baseline Case Description

The baseline scenario provides a reference against which the impacts of a particular action (e.g., a regulation) are measured. The three components of the baseline defined for this analysis are (1) the CAMU approval process, (2) the treatment and unit design requirements, and,

(3) the annual CAMU usage rate. All components of the baseline are defined with reference to the 1993 CAMU rule as implemented to date.

The process through which a CAMU was to be approved under the 1993 RIA was not formally and meticulously specified in the rule. The Agency, therefore, assesses the baseline for CAMU approval through use of the information gathered from the Regional and state CAMU experts (see Chapter 2 and Appendices A and B of this document). This information is then employed to project the changes in approval costs resulting from the CAMU Amendments.

Additionally, the 1993 CAMU rule was performance-based and did not include detailed requirements regarding treatment or unit design for CAMUs. Therefore, EPA employs the *CAMU Site Background Document*, which provides data on the treatment and unit design standards achieved in the 47 existing CAMUs approved to date. These data have been verified through EPA Regional review. Of the 47 existing CAMUs, eight are temporary CAMUs (i.e., treatment and/or storage only) and 39 are permanent CAMUs (i.e., disposal). According to these data, approximately 70 percent of facilities using CAMUs are performing treatment of waste. See Chapter 3 for more detail on this issue.

Baseline CAMU usage was defined through the data in the *CAMU Site Background Document*.[4] EPA estimates the usage rate as the total number of CAMUs approved, 47, divided by the number of years over which they were approved, eight (from 1993 to 2001). This approach yields approximately six CAMUs per year. EPA did not adjust this baseline figure to account for the effects of the uncertainty surrounding the CAMU litigation, which EPA believes has reduced CAMU usage since shortly after the rule's promulgation.

Post-Regulatory Case Description

The post-regulatory scenario is represented as the 1993 CAMU rule adjusted by the CAMU Amendments. See Chapters 2, 3, and 4 of this document, as well as to the preamble discussion and rule language for an understanding of these Amendments.

Quantifying the Incremental Impacts of the CAMU Amendments

EPA considers three categories of effects in quantifying the impacts resulting from the Amendments. The Amendments will not impact the nature of the remedial process in the corrective action program. CAMUs will remain one tool out of many available to the remedial decision maker. However, EPA believes that the Amendments will have three basic impacts.

[4] The CAMUs described in this document represent EPA's best estimate of all those CAMUs approved or scheduled to be approved before the final amendments are effective (90 days from the date of publication of the final rule).

(1) CAMU Approval Process: By formalizing the approval process required for CAMUs, the Amendments modify the approach under the existing CAMU rule, which had fewer formal information submission requirements.

(2) Treatment and Unit Design for CAMUs: The Amendments establish national minimum standards for treatment and unit design for CAMUs. The existing rule was more performance-based and therefore open to greater variance in the resulting remedy selected in a CAMU.

(3) Overall CAMU Usage: In addressing the 1993 CAMU lawsuit, the Amendments would remove the litigation cloud that had the effect of dampening use of CAMUs over the past eight years. Therefore, there may be an increase in the pace of CAMU use in the future as a result of the Amendments.

These three potential impacts are the subject of the next four Chapters of this analysis. The general approach used to assess each, as well as the location of each analysis in the document is shown in Exhibit 1-1. Chapter 6 of this analysis addresses the small entity impacts expected from the rule, as well as the other statutory requirements and Executive Orders that relate to this rulemaking.

Exhibit 1-1: Overview of the Incremental Impacts Analyzed for the CAMU Amendments

Incremental Impact Assessed	Analysis Approach	Nature and Location of Results
1. CAMU Approval Process Costs	Employ estimates obtained from CAMU experts on the change in approval costs/burden from baseline to post-regulatory case. Apply estimated change to the annual number of CAMUs approved to assess total annual impact.	Annual Incremental Cost (See Chapter 2 and summary in Chapter 5.)
2. CAMU Treatment and Unit Design for Permanent CAMUs, and Treatment and/or Storage Only CAMUs	Compare treatment and unit design employed for all existing CAMUs to the Amendment provisions. Assess whether Amendments would result in different treatment/unit designs being employed. (Distinguish permanent and treatment and/or storage only CAMUs.) Estimate impacts.	Annual Incremental Cost (See Chapter 3 and summary in Chapter 5.)
3. CAMU Usage Impacts	Perform bounding analysis by assessing the potential change (increase or decrease in usage resulting from the Amendments) from baseline CAMU usage. Project hypothetical magnitude for this change to estimate illustrative cost/savings impacts associated with the Amendments.	Incremental Costs/Savings (order-of-magnitude in nature) (See Chapter 4 and summary in Chapter 5.)

Chapter 2: Incremental Costs for Approving a CAMU

The information submission requirements in the CAMU approval process under the 1993 rule are stated in §264.552(d): "The owner/operator shall provide sufficient information to enable the Regional Administrator to designate a CAMU in accordance with the criteria in §264.552." This general requirement essentially allows a site manager to request whatever information is needed to approve a CAMU.

EPA is amending these requirements (at §264.552(d)(1)-(3)) to add language requiring facilities to submit three specific types of information in the CAMU approval process: (1) the origin of the waste and how it was subsequently managed; (2) whether the waste was listed or identified as hazardous at the time of disposal or release; and (3) whether the disposal and/or release of the waste occurred before or after the land disposal restrictions (LDRs) in effect for the waste. The Amendments also require that CAMU-authorizing documents require notification for groundwater releases as necessary to protect human health and the environment at §264.552(e)(5). In addition, changes in the CAMU technical standards (i.e., treatment and unit design requirements) will also affect the information needed to approve a CAMU.

This analysis examines the incremental impacts associated with the CAMU approval process through input from EPA Regional and state regulators.[1] The methods employed in assessing these incremental impacts and the resulting estimates are discussed in the following sections:

2.1 Employing CAMU Experts to Assess Costs

2.2 Total Impacts of the Amended Approval Process

Also, Appendix A contains the form used to solicit information from CAMU experts via telephone and Appendix B presents each expert's response to the questions posed.

What are the Main Findings in this Chapter?

The more formalized approval process in the CAMU Amendments is anticipated to result in additional costs over the approval process under the existing CAMU rule. Obtaining estimates of these additional costs from experts familiar with both processes, EPA projects incremental costs to be approximately $77,000 to $242,000 per year (approximately $12,900 to $40,400 per CAMU), assuming that six CAMUs are approved per year.

1 The potential impacts associated with the permit modification requirements for disposing of CAMU-eligible waste in off-site hazardous waste landfills are not addressed in this chapter. See the Paperwork Reduction Act discussion in Chapter 6 of this document for the estimated burden associated with this requirement.

2.1 Employing CAMU Experts to Assess Costs

This section discusses: (1) the methodology employed for obtaining information on the incremental costs associated with the CAMU approval process, and (2) the information obtained from Regional and state CAMU experts.

2.1.1 Method Used to Obtain Information from CAMU Experts

Assessing the incremental costs associated with the CAMU approval provisions requires a knowledge of both the baseline and post-regulatory approval processes. The approval process under these two cases varies significantly according to many factors related to the facility and the facility's remedial goals. Therefore, to obtain information on the expected impacts of the new approval process, EPA contacted Regional and state regulators who had experience implementing the existing CAMU rule and understood the Amendments.

To assess the incremental impacts from the CAMU approval process formalized in the Amendments, EPA performed the following steps:

Step 1: Select CAMU Experts

- EPA identified four Regional and four state CAMU experts (or pairs of experts from the same office) who were knowledgeable about CAMU implementation under the 1993 rule and about the Amendments.
- EPA contacted four Regional experts and one state expert between March and June of 2000. At this time, almost two-thirds of all approved CAMUs had been approved by the Regions and states whose experts were contacted.
- EPA interviewed three more state experts (or pairs of experts) in Spring 2001.
- EPA contacted each expert and explained the information requested. EPA mailed a list of questions (see Appendix A) and *Attachment A* from the CAMU Settlement Document (see the docket for this rulemaking) to each expert and set up a date for the phone contact.

Step 2: Obtain Approval Process Burden Estimates

- EPA contacted each of the experts separately and asked a set of pre-determined questions designed to cover all the main areas of the settlement document. See Appendix A: CAMU Expert Telephone Contact Information Form.
- Experts were asked to assess the incremental burden of the approval process under the Amendments compared to the approval process under the existing rule.

- Experts were requested to provide information based on approval of a CAMU at a "standard facility" in their Region or state ("standard facility" was not defined for the expert, although the Agency addressed any questions on this issue posed by the expert). Experts could provide an incremental burden range, instead of a point estimate, to capture variation and uncertainty.

- Experts were asked to estimate the incremental burden for both the regulator and the owner/operators. These estimates were based on professional experience and were not calculated through engineering cost analysis.

- EPA provided necessary clarification on the settlement document during the call. Each call took approximately 90 minutes. EPA transcribed the responses from each expert contact (Appendix B: CAMU Expert Telephone Contact Responses).

Step 3: Tabulate Burden Information

- The information from the eight CAMU experts is tabulated according to the breakdown of the settlement document. See Exhibit 2-1, below.

- Responses are entered in the Exhibit in the approximate form in which they were provided by the expert. Standard conversion factors are employed in summing the line items into a total estimate for each expert. For example, 1 day = 8 hours; 1 week = 40 hours; 1 month = 21.7 work days or 4.3 weeks.

- Where an estimate was provided on a per unit basis, it represented Solid Waste Management Units (SWMUs) or Regulated Units (RUs), not CAMUs; an average number of units per facility was calculated from the 1993 CAMU RIA (at page 2-4, Exhibit 2-2 of the RIA) at 15 units per facility.

- Where an expert did not state an exact number of days, weeks, or months of time cost (e.g. indicated "days to weeks"), EPA used the following rules:

  - The generic term "days" was provided by experts only as a lower bound. Thus, EPA converted "days" into the minimum number of days that constitute the plural, that is, two days.
  - The generic term "weeks" was provided by experts both as lower and upper bounds. For lower bound estimates, "weeks" is converted into two weeks. As an upper bound estimate, "weeks" is converted into four weeks, or the point at which weeks become a month. Four weeks is chosen under the assumption that, were additional weeks required, the experts would have used, and sometimes did use, the word "months."
  - The generic term "months" was used only as an upper bound. EPA converted "months" into four months, the largest specified number of months mentioned by any of the experts for any specific estimate.

Exhibit 2-1: Expert-Estimated Incremental Approval Costs from CAMU Amendments (burden per CAMU)

	Expert #1	Expert #2	Expert #3	Expert #4
Proposed CAMU Amendments				
1. CAMU Eligible Waste - Information Submission Requirements (264.552(d))				
(1) Origin of Waste	0	0	0	0
(2) Hazardous Designation	0	0	0	0
(3) Disposal/Release Before LDRs	1-2 days o/o[1] 1-2 days r or s[1]	3-4 hrs/unit o/o 2-3 hrs/unit r or s	4 hrs o/o[1] 2 hrs r or s[1]	1 wk o/o 2-3 days r or s
2. Identification of PHCs	0	0 (may reduce $)	0	1-2 days r or s
3. Treatment Requirements	0	0 (may reduce $)	0	0 (may reduce $)
4. Adjustment Factors (264.552(e)(4)(v))[2]				
(A) Technical Impracticability	0	0	0	0
(B) Consistency with Cleanup Levels	0	0	0	0
(C) Community Views	0	0	0	0
(D) Short Term Risks	0	0	0	0
(E) Protection of Engineering Controls	1 man-week[3] o/o	0	0	2-4 days o/o 2 days r or s
5. Liner Design Standards	0	0	0	-2 days r or s
6. Cap Standards	0	0	0	0
7. Treatment and/or Storage Only CAMUs	0	0 (may reduce $)	-[4]	-[4]
TOTAL, Permanent (hours/CAMU)	24-72 hours	75-165 hours	2-6 hours	80-112 hours
TOTAL, Treatment and/or Storage Only (hours/CAMU)	4-32 hours	75-165 hours	2-6 hours	56-64 hours

Notes:

"o/o" = owner/operator
"r or s" = Regional or state regulator
"per unit" estimates are for SWMUs and RUs
Totals are calculated using standard conversion factors; see Section 2.1.1.

1 This estimate applies to only a "few sites" out of all those for which CAMUs are approved. To generate lower bound estimates, this cost is multiplied by 25 percent to represent a lower expected cost for any individual CAMU.
2 The estimates shown for adjustment factor E to some degree represent impacts from the other adjustment factors as well. Experts stated that the level of effort associated with the adjustment factors did not necessarily fall out into neat bundles under one particular adjustment factor. However, factor E was determined to be the most likely to introduce new burden.
3 Stated that this time cost applies only to half of the CAMU sites.
4 No answer given because of expert's lack of familiarity with the staging pile provisions on which the treatment and/or storage only CAMU provisions are based.

Exhibit 2-1: Expert Estimated Incremental Approval Costs from CAMU Amendments (continued)

	Expert #5	Expert #6	Expert #7	Expert #8
Proposed CAMU Amendments				
1. CAMU Eligible Waste - Information Submission Requirements (264.552(d))				
(1) Origin of Waste	0	0	0	0
(2) Hazardous Designation	0	0	0	0
(3) Disposal/Release Before LDRs	0	0 (may reduce $)	2 - 4 wks o/o -3 to -4 days r/s	2 wks o/o 1 - 2 days r or s
2. Identification of PHCs	2 days - 4 wks[1] o/o	2 wks-4 mths o/o[1] 1 - 2 wks r or s	2 days -1 wk o/o 0 (save time r/s)	3 - 4 days o/o 3 - 4 days r or s
3. Treatment Requirements	0	2 - 4 mths o/o[1,2] 2 - 3 wks r or s[1,2]	3 wks o/o 0 - 1 wk r or s	1 - 2 wks o/o 3 - 4 days r or s
4. Adjustment Factors (264.552(e)(4)(v))[3]				
(A) Technical Impracticability	0	2 - 4 wks o/o[4] 1 - 2 wks r or s[4]	2 wks o/o[5] 3 days -1 wk r/s[5]	5-10 days r or s
(B) Consistency with Cleanup Levels	0	2 - 4 wks o/o[6] 1 - 2 wks r or s[6]	0 o/o 4 - 5 days r or s[7]	2 - 4 days r or s
(C) Community Views	0	0	1 wk o/o[8] 1 - 2 wks r or s[8]	1 day r or s
(D) Short Term Risks	0	0	0	1 - 3 days r or s
(E) Protection of Engineering Controls	2 wks - 4 mths[1] o/o	1 mth o/o 1 - 3 wks r or s	2 wks o/o[6] 1 - 2 wks r or s[6]	6 - 8 days r or s
5. Liner Design Standards	2 wks - 4 mths[1] o/o	2 - 4 wks o/o[9] 1 - 2 wks r or s[9]	1 - 2 wks o/o [10] 1 - 2 wks r or s [10]	2 - 4 days r or s
6. Cap Standards	0	0	Estimate included in Liner Design Standard, above.	Estimate included in Liner Design Standard, above.
7. Treatment and/or Storage Only CAMUs	-[11]	0	0	1 - 2 days r or s
TOTAL, Permanent (hours/CAMU)	100-1,015 hours	743-1,875 hours	324-477 hours	336-512 hours
TOTAL, Treatment and/or Storage Only (hours/CAMU)	0 hours	0 hours	8-16 hours	96-112 hours

Notes:

"o/o" = owner/operator
"r or s" = Regional or state regulator
"per unit" estimates are for SWMUs and RUs
Totals are calculated using standard conversion factors; see Section 2.1.1.

1 Answered "days to weeks" or "weeks to months;" figures calculated assuming 2 days, or 2 weeks if "days" or "weeks" represented the lower bound of the estimate or 4 weeks and 4 months if "weeks" or "months" represented the upper bound of the estimate.
2 Stated that this time cost applies only to two-thirds of the CAMU sites.
3 For expert #5, the estimates shown for adjustment factor E to some degree represent impacts from the other adjustment factors as well. Some experts stated that the level of effort associated with the adjustment factors did not necessarily fall out into neat bundles under one particular adjustment factor. However, factor E was determined to be the most likely to introduce new burden.
4 Stated that this time cost applies only to 15 percent of the CAMU sites.
5 Stated that this time cost applies only to 30 percent of the CAMU sites.
6 Stated that this time cost applies only to three-quarters of the CAMU sites.
7 Stated that this time cost applies only to 10 percent of the CAMU sites.
8 Stated that this time cost applies only to one-third of the CAMU sites.
9 Stated that this time cost applies only to one-quarter of the CAMU sites.
10 Stated that this time cost applies only to half of the CAMU sites.
11 No answer given because of expert's lack of familiarity with the staging pile provisions on which the treatment and/or storage only CAMU provisions are based.

- Where an expert estimate was stated to apply to only a "few" or "some" sites, or "only complex sites," upper bound estimates are generated by applying incremental time costs to all sites, and lower bound estimates are generated by applying the costs only to a quarter of the sites. Calculating the per CAMU burden requires weighting the incremental time burden by 25 percent for the lower bound only.

- Only two experts quantified specific amounts of time that would be saved due to a given aspect of the information requirements in the Amendments. All other non-specific time savings mentioned by the experts are entered as zero.

- Some experts did not feel comfortable estimating all or part of the costs associated with certain provisions of the CAMU Amendments. Rather than artificially impute positive values lacking justification, EPA does not apply a value for these responses.

- Where a single figure was provided (not a range) for a line-item, that figure is added to both the low- and high-end estimate.

- The total burden for permanent (disposal) CAMUs is calculated separately from the total burden for treatment and/or storage only CAMUs.

- The total burden estimate range is calculated by first adding together the low-end and high-end estimates separately for each expert. Then the low-end and high-end burdens are averaged across experts. Again, these calculations are performed separately for permanent and treatment and/or storage only CAMUs.

- The burden range for permanent or treatment and/or storage only CAMUs is multiplied by the number of estimated annual new permanent or treatment and/or storage only CAMUs.

This process provided EPA with expert estimates of the incremental impacts for the amended CAMU approval process. From this information, EPA calculates the total average incremental impact per CAMU for permanent and for treatment and/or storage only CAMUs. These estimates then are employed to develop a total incremental impact for the amended approval process.

2.1.2 Information Obtained from Regional and State CAMU Experts

As discussed above, the information obtained through contacts with the CAMU experts is totaled for each expert and is presented in Exhibit 2-1. The Exhibit portrays the low-end and high-end total estimate of the incremental impact for the CAMU approval process. Total burden ranges for permanent and treatment and/or storage only CAMUs are added separately.

Characterization of Expert Burden Estimates

Expert views differed considerably on the impacts. Four of the experts believed the formalization of a process associated with certain steps might reduce overall burden. Such a formalized process, they believed, would result in less time spent discussing the proper approach to take at a particular stage in the approval process. Alternatively, some experts thought that the changes in process requirements would be so onerous that they could drive some facilities away from using a CAMU.

Three of the experts lacked the familiarity with the staging pile regulations, on which the standards for treatment and/or storage only CAMUs are based, to feel comfortable giving answers. These estimates are left as non-responses in calculating time cost bounds. Four of the experts stated that they believed the treatment and/or storage only CAMU provisions in the Amendments would result in no increase to the burden already required for temporary CAMUs under the 1993 CAMU rule.

As shown in Exhibit 2-1, the experts estimated additional burdens associated with the Amendments in each area.

- *Information submission associated with the determination of whether the disposal and/or release of the waste occurred before or after the land disposal restrictions (LDRs) in effect for the waste:* This requirement is a part of the provision in the Amendments that addresses CAMU waste eligibility. The estimates shown for experts #1, #2, and #4 were stated by the experts to apply only to complex facilities. Under normal site conditions, these experts did not believe any additional effort would be required. Two experts (#6 and #7) believed it would add time for facilities, which mostly would be offset by time savings for regulators.

- *Identification of principal hazardous constituents (PHCs)*: Five experts (Experts #4 through # 8) estimated additional burden associated with identification of principal hazardous constituents (PHCs) at the site.

- *Treatment requirements and adjustment factors A-D (§264.552(e)(4)(v)(A,B,C, and D))*: Only experts #6 through #8 expected costs from the treatment requirements and from adjustment factors A through C, and only expert #8 expected costs from adjustment factor D.

- *Adjustment factor E (§264.552(e)(4)(v)(E))*: Experts #1 and #4 through #8 estimated additional burden associated with use of the factors for adjustment from treatment in the Amendments. Experts #1, #4, and #5 stated some concern regarding the precision with which they could assign additional burden to a particular adjustment factor, and therefore focused on adjustment factor E in making their burden estimates. These experts believed adjustment factor E was the most complicated and therefore the most likely to require significant formal

written justification. Adjustment factor E offers adjustment from the treatment standards based on chemical or physical properties of the waste and the long-term protection offered by the unit.

- *Liner/cap design standards*: Experts #5 through #8 estimated additional time for the process associated with the liner and cap standards at some facilities. The Amendments allow for alternatives to the liner and cap standards where it can be shown that the alternatives provide equivalent protection. The process associated with justifying use of alternate standards is most likely where the additional time would occur.

Calculation of Average Total Estimated Burden

From the total estimate ranges for each of the experts, EPA calculates a low-end and high-end average total estimated burden for permanent and, separately, for treatment and/or storage only CAMUs. If the expert indicated that the stated burden applied only to a specific percentage of CAMUs, that percentage is applied to both the low-end and high-end estimate for that item. If the expert indicated that the stated burden applies to "a few" or "some" or "only complex" CAMUs, a figure of 25 percent is applied to only the low-end estimate for that item. For permanent CAMUs, the impacts for all items except line seven in Exhibit 2-1 (which addresses treatment and/or storage only CAMUs) are added together and divided by eight (the number of expert estimates) to produce the average low-end total estimate. The average high-end total estimate is produced similarly. The resulting range of total incremental impacts for permanent CAMUs, calculated as an average across the eight experts, is 210 hours to 514 hours per CAMU, as shown below:

Total Estimates for Permanent CAMUs

$$\text{Low-End Average} = \frac{24 + 75 + 2 + 80 + 100 + 743 + 324 + 336 \text{ hours}}{8 \text{ estimates}} = 210 \text{ hours/CAMU}$$

$$\text{High-End Average} = \frac{72 + 165 + 6 + 112 + 1{,}015 + 1{,}875 + 477 + 512 \text{ hours}}{8 \text{ estimates}} = 514 \text{ hours/CAMU}$$

The lowest total burden figure provided by a single expert was two hours per CAMU. The highest total burden figure given by an expert was 1,875 hours per CAMU. This variance likely reflects differences in the baseline implementation of the CAMU rule for a given Region or state and different interpretations of both how the new process would be implemented and what constitutes the "standard facility" used by a given expert to formulate a burden estimate.

For treatment and/or storage only CAMUs, the impacts for item one are added together and divided by eight (the number of expert estimates). Impact estimates from line seven are added together and divided by five, the number of experts providing estimates for that item. The results for line one and line seven are summed for average low-end and high-end estimates for

treatment and/or storage only CAMUs. The resulting range is 34 hours to 50 hours per CAMU, as calculated below.

Total Estimates for Treatment and/or Storage Only CAMUs – Low-End

Line 1 (Information Submission) Costs

$$\text{Low-End Average} = \frac{4 + 75 + 2 + 56 + 0 + 0 + 8 + 96 \text{ hours}}{8 \text{ estimates}} = 32.7 \text{ hours/CAMU}$$

Line 7 (Treatment and/or Storage Only CAMUs) Costs

$$\text{Low-End Average} = \frac{0 + 0 + 0 + 0 + 8 \text{ hours}}{5 \text{ estimates}} = 1.6 \text{ hours/CAMU}$$

Total Low-End Average = 32.7 + 1.6 = 34 hours/CAMU (rounded)

Total Estimates for Treatment and/or Storage Only CAMUs – High-End

Line 1 (Information Submission) Costs

$$\text{High-End Average} = \frac{32 + 165 + 6 + 64 + 0 + 0 + 16 + 112 \text{ hours}}{8 \text{ estimates}} = 46.5 \text{ hours/CAMU}$$

Line 7 (Treatment and/or Storage Only CAMUs Only) Costs

$$\text{High-End Average} = \frac{0 + 0 + 0 + 0 + 16 \text{ hours}}{5 \text{ estimates}} = 3.2 \text{ hours/CAMU}$$

Total High-End Average = 46.5 + 3.2 = 50 hours/CAMU (rounded)

2.2 Total Impacts of the Amended Approval Process

EPA estimates the range of total incremental burden, calculated as an average of the expert estimates, to be between 210 hours and 514 hours per CAMU for permanent CAMUs and between 34 hours and 50 hours per CAMU for treatment and/or storage only CAMUs. This section discusses the use of this burden range to develop the total incremental impacts resulting from compliance with the Amendments. EPA follows these steps in calculating the total impact:

Step 1: Estimate the Average Number of CAMUs Approved Annually by dividing the total number of CAMUs approved under the existing CAMU rule by the number of years the rule has been in effect.

EPA calculates the number of CAMUs approved per year from the baseline data in the *CAMU Site Background Document*. The total number of CAMUs known or expected to be

approved under the existing rule is 47. The rule has been in place since 1993, although the first year was not quite a full year, and the analysis and final rule are expected to be completed before the end of 2001. EPA therefore uses eight years as a divisor to calculate the expected number of new CAMUs annually.

$$\text{CAMUs Approved Annually} = \frac{47 \text{ CAMUs}}{8 \text{ years}} \approx 6 \text{ CAMUs per year}$$

EPA assumes that the baseline rate of six CAMUs per year is representative of the future CAMU usage rate. EPA acknowledges that it is possible that additional CAMUs may be approved during the period, but this estimate relies on the best available data on this issue. This analysis does not consider any changes in the number of CAMUs approved per year that could result from the Amendments. Please see the discussion of this assumption in Chapter 1.

The annual approval rate of six CAMUs per year, however, includes both permanent and treatment and/or storage only CAMUs. There are eight treatment and/or storage only CAMUs out of the 47 total CAMUs approved or expected to be approved within the grandfathering time period. Therefore, the breakdown is approximately five permanent CAMUs per year and one treatment and/or storage only CAMU per year.

Step 2: Estimate the Total Incremental Burden of the Amended Approval Process by multiplying the incremental burden per CAMU by the annual number of CAMUs approved.

Low-End Estimates

Permanent CAMUs = 210 hours per CAMU x 5 CAMUs per year = 1,050 hours per year

Treatment and/or Storage Only CAMUs = 34 hours per CAMU x 1 CAMU per year = 34 hours per year

Total = 1,050 + 34 = 1,084 hours per year

High-End Estimates

Permanent CAMUs = 514 hours per CAMU x 5 CAMUs per year = 2,570 hours per year

Treatment and/or Storage Only CAMUs = 50 hours per CAMU x 1 CAMU per year = 50 hours per year

Total = 2,570 + 50 = 2,620 hours per year

As shown above, the total incremental burden associated with the CAMU approval process is estimated to range between approximately 1,084 to 2,620 hours per year.

Step 3: Determine the Labor Rate to Apply to Estimates of Incremental Burden: EPA uses the hourly labor rates from the Part B Permit ICR recently approved.[2]

These hourly rates are $92.52/hour for legal staff, $71.24/hour for managerial staff, $55.85/hour for technical staff, and $24.97 for clerical staff. However, as no breakdown was given by the CAMU experts regarding the personnel categorization for the CAMU approval hours. Therefore, the highest labor rate, $92.52/hour, is assumed for all burden hours for the high-end estimate, and the managerial staff rate of $71.24/hour is assumed for all burden hours for the low-end estimate.

Step 4: Estimate the Total Incremental Impact of the Amended Approval Process by multiplying the incremental burden estimate (see Step 2) by the relevant labor rates (see Step 3).

Low-End = 1,084 hours per year x $71.24 per hour labor rate = $77,224 per year

High-End = 2,620 hours per year x $92.52 per hour labor rate = $242,402 per year

Thus, the total incremental impact attributable to the changes in the amended CAMU approval process is estimated to be approximately $77,000 to $242,000 per year, assuming six CAMUs are approved each year. If that figure changes in any given year, the annual impacts for that year would change accordingly. Dividing by six (the number of CAMUs approved per year) yields an estimate of the average incremental impact per CAMU; this estimate ranges between $12,900 and $40,400 per CAMU.

Exhibit 2-2 summarizes the incremental burden and incremental cost calculations discussed in steps 1 through 4 above for both permanent and treatment and/or storage only CAMUs. The total per CAMU cost for the low-end and high-end estimates is shown as well.

[2] Part B Permit Application, Permit Modifications, and Special Permits. Information Collection Request #1573.06, October 27, 1999 (OMB #2050-0009).

Exhibit 2-2: Summary of the Incremental Cost Calculations for the Amended CAMU Approval Process				
Type of CAMU	**# of CAMUs (per yr)**	**Incremental Burden Per CAMU (Hours)**	**Total Incremental Burden (Hours)**	**Total Incremental Costs ($)**
Permanent				
Low-End Estimate	5	210	1,050	$75,000
High-End Estimate	5	514	2,570	$238,000
Treatment and/or Storage Only				
Low-End Estimate	1	34	34	$2,000
High-End Estimate	1	50	50	$5,000
Total				
Low-End Estimate	6	244	1,084	$77,000
High-End Estimate	6	564	2,620	$242,000
Low-End *Per CAMU* Est.				$12,900
High-End *Per CAMU* Est.				$40,400

Note: Dollar figures are rounded to thousands, except for calculations per CAMU.

Bounding Analysis

In this section, EPA conducts a bounding analysis of these costs, estimating the total approval costs using the highest estimate of incremental burden received from an expert. Expert #6 estimated that the formalized approval process in the Amendments could result in as high as 1,875 hours per CAMU added burden for permanent CAMUs (see Exhibit 2-1). Similarly, Expert #2 estimated that the amended approval process could result in as high as 165 hours per CAMU added burden for treatment and/or storage only CAMUs. Employing the same approach to calculating total impacts discussed above, the new cost estimate would be:

1,875 hours per CAMU x 5 CAMUs per year x $92.52 per hour = $867,250 per year for Permanent CAMUs

165 hours per CAMU x 1 CAMU per year x $92.52 per hour = $15,266 per year for Treatment and/or Storage Only CAMUs

$867,250 + $15,266 = $882,516 per year.

This figure translates to an estimate per year of approximately $882,500, which is just under four times greater than the upper bound estimate of total impacts. Dividing that total by six CAMUs per year yields a bounding analysis figure of $147,000 per CAMU.

Limitations of the Analysis

There are several limitations associated with the estimates of incremental costs for the formalized approval process. The most significant limitations are discussed below.

There is a paucity of data on the burden associated with approving a CAMU under the existing rule. In addition, the approval process differs significantly depending on the Region or state in which the CAMU is approved and the size and nature of contamination being remediated. In this context, EPA relied on estimates from Regional/state experts of the incremental burden associated with the new Amendments. However, there are many limitations associated with this approach. Estimating incremental burden requires a detailed knowledge of the approval process under the existing rule, assessment of how that process would change under the Amendments, and quantification of the incremental change in burden across the components of the process for an "average" CAMU. While EPA believes this approach to be the best under the given conditions, the significant variance in the estimates provided by the experts (see Exhibit 2-1) suggests a level of uncertainty associated with the results of such an approach.

In order to reflect this uncertainty in the analysis, EPA calculated a range of total incremental burden estimates (see Step 2 of Section 2.2). This range is retained throughout the calculation of total impacts associated with the approval process. In addition, EPA performed a bounding analysis to portray the significance of the uncertainties in the burden estimates. The bounding analysis shows a variance in estimates of total impact of a factor of approximately four when compared with the upper bound of the estimated total incremental impacts. While this uncertainty may have been reduced through the inclusion of additional experts in the burden estimate process, the universe of people with the required background on CAMU approval was deemed too small to increase the contact list.

Finally, some negligible costs are likely to be incurred as a result of the new requirement for notification of groundwater releases (§264.552(e)(5)). These costs are not discussed in this *Economic Analysis*. For a detailed explanation of costs from the paperwork requirements, see the Supporting Statement for Information Collection Request Number 1573.08, "Amendments to the Corrective Action Management Rule," June 18, 2001.

Chapter 3: Incremental Impacts of the Treatment and Unit Design Provisions for Permanent CAMUs and Incremental Impacts of the Treatment and/or Storage Only CAMU Provisions

In this Chapter, the Agency examines the incremental impacts attributable to the treatment and unit design provisions and to the treatment and/or storage only CAMU provisions in the CAMU Amendments. As described in the analytical framework discussion in Chapter 1, this analysis examines how the 47 CAMUs approved or soon to be approved under the 1993 rule would need to be changed if they were being approved under the new Amendments.[1] Based on these changes, the Agency determines the impacts of the treatment and unit design Amendments. (Please See Appendix C: Comparison of the 1993 CAMU Rule and the Final CAMU Amendments.)

This Chapter is divided into the following sections:

What are the Main Findings of this Chapter?

Incremental impacts associated with the permanent CAMU Amendments:

- *Of the 39 permanent CAMUs approved or soon to be approved under the existing rule, three CAMUs were identified as potentially being inconsistent with the amended unit design requirements. Two of these CAMUs likely would require additional cap design features and one likely would require a liner.*

- *The total cost of bringing these three CAMUs into consistency with the Amendments is estimated to range between $1,088,000 and $1,649,000. The annualized costs range between $103,000 and $156,000.*

[1] As discussed in Section 1.3.1, because of the grandfathering provisions in the rule, these 47 existing CAMUs would not be subject to the Amendments so long as they continue to operate within the general scope of their approval. EPA used the historical data in the *CAMU Site Background Document* on these 47 CAMUs as a means of assessing the potential impacts on future CAMUs approved under the amended standards.

- *The average incremental cost associated with the treatment and unit design requirements is estimated to range between approximately $28,000 and $42,000 per permanent CAMU.*

- *Applying the average incremental cost per permanent CAMU to the five permanent CAMUs expected to be approved per year in the future results in a cost of $140,000 to $210,000 per year.*

Incremental impacts associated with the treatment and/or storage only CAMU Amendments:

- *Of the eight treatment and/or storage only CAMUs approved under the existing rule, none were identified as being inconsistent with the unit design requirements in the Amendments.*

Therefore, the total cost impacts associated with the treatment and unit design requirements for permanent CAMUs and for treatment and/or storage only CAMUs are estimated to range between $140,000 to $210,000 per year.

3.1 Baseline Treatment and Unit Design Standards

The Agency designed the 1993 CAMU rule to facilitate treatment at remediation sites by removing the disincentives to treatment. The 1993 CAMU rule established performance standards for the design, operation, and closure of CAMUs and provided site-specific flexibility that EPA believed was necessary to encourage remediation at corrective action sites. The regulatory language explicitly states that CAMUs do not have to meet the minimum technology requirements (MTRs) and that placement of hazardous wastes into a CAMU does not constitute land disposal (§264.552(a)(1) and (2)). The preamble language accompanying the rule discussed EPA's anticipation that remediation wastes would receive treatment wherever necessary for protective management.[2]

In preparing the CAMU Amendments, EPA gathered information from Regional site managers on the CAMUs known to be approved (or, for a few sites, near approval) under the existing CAMU rule. The report produced from this data collection, the *CAMU Site Background Document*, is included in the docket for this rulemaking. This report presents information on 47 CAMUs, eight of which are specified as treatment and/or storage only CAMUs. These data on the implementation of the existing CAMU rule show that approximately 70 percent of the 39 permanent CAMUs approved to date or near approval have employed waste treatment prior to disposal and are generally employing liners for new units, as well as protective caps, and groundwater monitoring. Exhibit 3-1 lists all 39 existing permanent CAMUs by Region, with a brief summary of the treatment and unit design standards at each CAMU. The data on the eight

[2] More information on general corrective action program guidance and policy is available at www.epa.gov/epaoswer/hazwaste/ca/index.htm.

treatment and/or storage only CAMUs are presented in Exhibit 3-4. These data allow the Agency to assess the incremental impacts associated with the treatment and unit design provisions of the CAMU Amendments.

3.2 Amended Treatment and Unit Design Standards for Permanent CAMUs

The two subsections that follow summarize the amended treatment and unit design standards in the rule. These provisions are discussed in more detail in the preamble to the rule.

3.2.1 Amended Treatment Standards

The Amendments establish national minimum treatment standards that all principal hazardous constituents (PHCs) must meet prior to disposal in a CAMU, unless the Agency determines in a given case that the standards are inappropriate (see discussion of adjustment factors below). This national minimum standard is essentially taken from the treatment standard promulgated for hazardous soils in the Phase IV LDR Final Rule.[3] This standard requires treatment of all CAMU-eligible wastes that contain PHCs to 90 percent reduction from the original concentrations, capped by 10 times the Universal Treatment Standard (UTS) level.

Five adjustment factors accompany the national minimum treatment standard. The adjustment factors provide site-specific flexibility in applying the treatment standards by identifying conditions under which full compliance with the national standard may be adjusted. These adjustments may be used to make treatment more or less stringent and to adjust a treatment level or method. The Agency developed these treatment requirements and adjustment factors by examining the implementation of the current CAMU rule and the general process involved in remedy selection in the corrective action program. EPA also considered the treatment variances used for as-generated waste under the Land Disposal Restrictions (LDR) program. The resulting adjustment factors are defined briefly below. (See the preamble to the final Amendments to the CAMU rule for a comprehensive discussion of the treatment standards and adjustment factors.)

- Adjustment Factor A: Technical Impracticability (§264.552(e)(4)(v)(A)): This adjustment factor operates similar to "unachievable" and "technically inappropriate" considerations in LDR treatability variances. This factor allows consideration to be made in cases where the treatment level or method is for some reason unable to be met, or when a standard is achievable but not desirable (e.g., technically inappropriate when normal application of a standard would call for incineration of very large amounts of mildly contaminated soil). This factor does not incorporate by reference the mechanics of the treatability variances, but only borrows the concepts from them.

[3] LDR, Phase IV–Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters; Final Rule, May 26, 1998 (63 FR 28555).

- Adjustment Factor B: Consistency with Site Cleanup Levels (§264.552(e)(4)(v)(B)): This factor allows adjustment of treatment levels or methods where treatment standards would result in treatment much higher or lower than the cleanup goals at a given site. This factor is similar to the "site-specific minimize threat" LDR variance. In the use of this adjustment factor, the protection offered by the CAMU itself (i.e., the unit design) is not to be considered.

- Adjustment Factor C: Community Views (§264.552(e)(4)(v)(C)): This factor allows the adjustment of treatment based on community views.

- Adjustment Factor D: Short-Term Risks (§264.552(e)(4)(v)(D)): This factor allows short-term risks to be considered. Short-term risks associated with remedies and treatment technologies are routinely considered during the remedy selection process under the RCRA corrective action program and may form the basis for determining that certain methods of treatment are not appropriate.

- Adjustment Factor E: Engineering Controls (§264.552(e)(4)(v)(E)): This adjustment factor has several parts.

  Adjustment Factor E(1): allows adjustment of the minimum national treatment standards to require less treatment than would otherwise be required, based on the long-term protection offered by the engineering design of the CAMU and related engineering controls when: (1) the minimum national treatment standards are "substantially met," and (2) PHCs are of "very low mobility."

  Adjustment Factor E(2): allows adjustment of the minimum national treatment standards based on the long-term protection offered by the engineering design of a CAMU and related engineering controls when: (1) cost-effective treatment has been used, and (2) the CAMU meets the liner and leachate collection requirements for new hazardous waste landfills.

  Adjustment Factor E(3): allows adjustment of the minimum national treatment standards based on the long-term protection offered by the engineering design of a CAMU and related engineering controls when: (1) cost-effective treatment is not reasonably available, and (2) the CAMU meets the liner and leachate collection requirements for new hazardous waste landfills.

  Adjustment Factor E(4): allows adjustment of the minimum national treatment standards based on the long-term protection offered by the engineering design of a CAMU and related engineering controls when: (1) cost-effective treatment has been used, and (2) PHCs are of very low mobility.

  Adjustment Factor E(5): allows adjustment of the minimum national treatment standards based on the long-term protection offered by the engineering design of a

CAMU and related engineering controls when: (1) cost-effective treatment is not available, (2) PHCs in the wastes are of very low mobility, and (3) the CAMU meets the design and operation standards for new, replacement or laterally expanded CAMUs promulgated today (including alternative standards).

3.2.2 Amended Unit Design Standards

The Amendments establish standards for liners at all new and replacement units or lateral expansion of existing units and for caps at units where waste is left in place. EPA believes these standards are reasonable and consistent with the standard approaches taken to ensure long-term protection of human health and the environment.

The Amendments require that all new, replacement, and laterally expanded units where waste will remain in place after closure be constructed with a composite liner and leachate collection system. Two alternatives to the liner standard provide a balance between specific minimum national standards and accommodating site-specific conditions.

EPA also is establishing a standard for caps on permanent CAMUs. The standard requires that the cap (1) minimize long-term migration of liquids through the closed unit, (2) function with minimum maintenance, (3) promote drainage and minimize erosion or abrasion of the cover, (4) accommodate settling and subsidence so that the cover's integrity is maintained, and (5) have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present. An alternate cap standard is also included in the rule. See the preamble to the final Amendments for a more detailed discussion of both the liner and cap standards.

3.3 Incremental Impacts from Treatment and Unit Design Standards for Permanent CAMUs

As discussed in Chapter 1, EPA uses the historical data in the *CAMU Site Background Document* on the 39 existing (baseline) permanent CAMUs to assess the impacts from the Amendments on CAMUs approved in the future. The Agency examines how the baseline requirements (i.e., the 1993 CAMU rule) have been implemented to date at these CAMUs and assesses where changes likely would be required at these facilities if they were approved under post-regulatory conditions (i.e., the amended standards). (See Appendix C: Side-by-Side Comparison of the 1993 CAMU rule and the CAMU Amendments.) EPA estimates the costs where such changes likely would be required. These costs represent estimates of the impact of these provisions on future CAMUs.

EPA examines the incremental changes to the 39 baseline permanent CAMUs that would be required to achieve consistency with the post-regulatory requirements. The Agency performs the assessment in the following steps:

Step 1: Compare Baseline Practices to Post-Regulatory Requirements: In comparing the baseline treatment and unit design standards for each CAMU to the post-regulatory requirements, EPA considered the following five questions:

(1) Does the facility have constituents that likely would be designated as PHCs?

(2) For a facility where PHCs likely are present, is treatment performed to reduce PHC concentrations?

(3) Where treatment is performed, does it meet the national minimum standards?

(4) Is the CAMU an existing unit? and

(5) What are the CAMU liner and cap requirements?

Step 2: Assess Need for Changes to Baseline CAMUs: Based on the assessment in Step 1, the Agency determined whether the baseline practices at the CAMU were consistent with the Amendments. Where inconsistencies were identified, EPA assessed the application of the adjustment factors for treatment and considered the use of alternative liner and cap standards as appropriate to conditions at the site. Where adjustment factors and alternative standards were not applicable, EPA identified the steps that likely would be used to achieve consistency with the provisions.

Step 3: Estimate Incremental Impacts: EPA estimates the cost implications of the changes which likely would be needed for the CAMU to be consistent with the Amendments. EPA performed each of the above steps based on a detailed knowledge of the baseline CAMU requirements, the rule provisions, and the details of the existing CAMU being analyzed.

Exhibit 3-1 portrays the results of this assessment of 39 permanent CAMUs. The cost implications for individual CAMUs are discussed following the exhibit.

Exhibit 3-1: Information on Treatment and Unit Design Standards for Permanent CAMUs in the Baseline[4]

CAMU	Purpose of CAMU	PHCs/Waste Treatment in the Baseline	Assessment Against Treatment Amendments	Unit Design in the Baseline	Assessment Against Unit Design Amendments
EPA REGION 1					
Dow Chemical, Allyn's Point Plant Gales Ferry, Connecticut CTD001159730	Treating remediation wastes to industrial cleanup standard and disposing of waste in an existing landfill.	Has PHCs. Treatment by SVE to UTS levels.	Consistent	Existing unit. Asphalt cap.	Consistent
Hamilton Standards Windsor Locks, Connecticut CTD001145341	Adding contaminated soil to existing landfill and constructing adjacent new cell to dispose of PCB soils.	No PHCs. No treatment. Wastes in containers or any hot spots sent off-site for treatment/disposal.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor A is applied	Existing and new unit both with composite caps and groundwater monitoring. New unit will have composite liner.	Consistent
Newtown Refining Corporation (formerly PSC Resources) Palmer, Massachusetts MAD980672208	Consolidating contaminated soils, lagoon sediments, and wetland sediments into a former waste disposal unit for treatment by *ex situ* mixing and stabilization before placement.	Has PHCs. Stabilization of metals and varied organics.	Consistent when adjustment factor A is applied	Existing unit with composite cap and groundwater monitoring.	Consistent
EPA REGION 2					
American Home Products (a.k.a. American Cyanamid) Bound Brook Bridgewater, New Jersey NJD002173276	Treating and disposing of treated remediation wastes.	No PHCs. Tar wastes undergo low temperature treatment, organic sludge is biotreated, inorganic sludge solidified.	Consistent	Four cells; each meets MTRs (for liner, leachate collection) and has groundwater monitoring.	Consistent
Ciba-Geigy, Main Plant Glen Falls, New York NYD002069748	Disposing of contaminated soils and sludges.	Has PHCs. No treatment of waste prior to disposal. Includes heavy metals, VOCs and SVOCs, some at high levels.	Consistent	Existing unit undergoing RCRA closure; RCRA cap and groundwater monitoring.	Consistent
Laidlaw Environmental Services (formerly Rollins Environmental Services, a.k.a. Safety-Kleen) Bridgeport, New Jersey NJD053288239	Disposing of 85,000 cubic yards of stabilized remediation waste soils and sludges.	No PHCs. Treated by stabilization to levels below UTS.	Consistent	Unit meets MTRs. Double liner, cap, and groundwater monitoring system.	Consistent

[4] This table summarizes information presented in the *CAMU Site Background Document* and, for the purpose of this Exhibit, is abbreviated. It is meant solely to present a general picture of the information the Agency had on existing CAMUs and, therefore, should not be relied upon in making judgments regarding any individual CAMU decisions. For more information (including any qualification on the conclusions reflected here), refer directly to the *CAMU Site Background Document*.

Exhibit 3-1: Information on Treatment and Unit Design Standards for Permanent CAMUs in the Baseline (continued)

CAMU	Purpose of CAMU	PHCs/Waste Treatment in the Baseline	Assessment Against Treatment Amendments	Unit Design in the Baseline	Assessment Against Unit Design Amendments
Proteco and Servicios Carbareon, Inc. Penuelas, Puerto Rico PRD091018622	Storing, treating, and disposing of remediation wastes.	No PHCs. Treatment by stabilization meets Region 3's Risk-Based Concentration Table numbers.	Consistent	CAMU uses existing oil lagoon; will undergo RCRA closure, including capping. Unit has synthetic/soil liner and groundwater monitoring.	Consistent
Roth Brothers Smelting Corp. East Syracuse, New York NYD006977086	Treating and disposing of soils and sediments.	Possible inorganic PHCs. Soils and sediments stabilized to mainly address lead as well as PCB at levels between 25 and 50 ppm. PCB levels greater than 50 ppm are disposed of off-site. Treatment to UTS.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor B is applied	Unit capped with groundwater monitoring. No liner. Unit is in significantly contaminated area; consistent with 264.552(e)(3)(ii)(B).	Consistent
EPA REGION 3					
Cytec Industries, Inc. (formerly American Cyanamid) Willow Island, West Virginia WV0001905942	Disposing of investigation-derived waste and other remediation wastes.	No PHCs appear to be present. No treatment occurring.	Consistent	Unit is formerly a RCRA regulated unit and will be capped. Permit limit of 90,000 cubic yards of remediation wastes.	Consistent
East Pennsylvania Manufacturing Lyon Station, Pennsylvania PAD002330165	Treating and disposing of remediation wastes.	Cannot determine if PHCs present. Treated lead contaminated soil and battery waste to UTS.	Consistent	Cap design will incorporate buildings as well as low permeability materials. Groundwater monitoring.	Consistent
EPA REGION 4					
Air Products and Chemicals, Inc. Pace, Florida FLD008155673	Treating and disposing of remediation wastes.	No PHCs. Treatment to $1x10^{-6}$ levels. Consolidation and biotreatment of 10,000 cubic yards of soils.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor B is applied	Unit has double liner, cap, leachate collection system, and groundwater monitoring system. Cap engineered to promote biodegradation.	Consistent when alternate cap standard 264.552(iv)(B) is applied
ATOFINA (formerly Elf ATOCHEM NA, Inc.) Calvert City, Kentucky KYD006370159	Disposing of stabilized remediation wastes.	Cannot determine if PHCs present. Wastes will be reduced in toxicity and/or rendered immobile.	Consistent when adjustment factor E(4) is applied	Unit will consist of a compacted base, synthetic liner, geonet drainage layer, composite cap, and groundwater monitoring.	Consistent
Blackman Uhler Chemical Company Spartanburg, South Carolina SCD003349065	Disposing of remediation wastes.	PHCs are present. Soil venting to address risk-driving constituents; not all PHCs addressed.	Consistent when adjustment factor E(2) is applied	Permanent cap will meet RCRA performance-based criteria. Unit will have groundwater monitoring and recovery systems.	Under the rule, might require a composite liner

Exhibit 3-1: Information on Treatment and Unit Design Standards for Permanent CAMUs in the Baseline (continued)

CAMU	Purpose of CAMU	PHCs/Waste Treatment in the Baseline	Assessment Against Treatment Amendments	Unit Design in the Baseline	Assessment Against Unit Design Amendments
Cedartown Industries Cedartown, Georgia GAD095840674	Treating and disposing of remediation wastes.	Cannot determine if PHCs present. Treatment to levels that would render wastes to risk-based levels.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor B is applied	Existing unit capped; has groundwater monitoring.	Consistent
Koppers Industries, Inc. Guthrie, Kentucky KYD006383392	Treating and disposing of remediation wastes.	Possible PHCs. Treatment to below MCLs.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor B or E(4) is applied	Existing unit will have a cover, cap, and groundwater interceptor system.	Consistent
Morton International MPD (formerly Morton Chemical) Moss Point, Mississippi MSD008186587	Treating and disposing of remediated soils, sludges, and debris contaminated with VOCs, SVOCs, and metals.	Possible PHCs. Treatment of any PHCs to risk-based levels.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor B is applied	Closing Subtitle C unit. Design standards for liner and cap systems are based on RCRA Subtitle D. Unit has leachate collection system and groundwater monitoring.	Consistent
Southern Wood Piedmont Augusta, Georgia GAD051034387	Encircling a former wood treating unit with a slurry wall and disposing contaminated soils generated during construction of the slurry wall.	No PHCs (no wastes disposed of in CAMU).	Consistent	The existing unit has a cover and cap with a synthetic liner, groundwater interceptor system, and groundwater monitoring.	Consistent
Vicksburg Chemical Company Vicksburg, MS MSD990714081	Treating, storing, and disposing of soils and other remediation wastes. Also, CAMU used for storage of wastes being sent off-site for treatment and disposal. Any wastes not treated that are still hazardous to go off-site.	Has PHCs. Treatment tests with biotreatment show pesticides treatable to below health-based levels; arsenic treatment to contained-out levels, if achievable.	Consistent, possibly apply adjustment factor A for arsenic, or adjustment factor B for organic constituents	Likely use cap and groundwater monitoring for the disposal unit, if treatment standards not to health-based levels. Considering use of liners, other controls for storage/treatment areas.	Consistent
William L. Bonnell Company Newnan, Georgia GAD003273224	Treating and disposing of soil, sediment, and sludge. 3,500 cubic yards of soil, 100,000 cubic yards of sludge and sediments contaminated with metals, and low levels of VOCs.	Cannot determine if PHCs present. Treatment using lime kiln dust and CKD believed to meet LDRs for primary constituents (metals).	Consistent	Closing Subtitle C unit. Design includes liner, leachate collection system, cap, and groundwater monitoring.	Consistent

Exhibit 3-1: Information on Treatment and Unit Design Standards for Permanent CAMUs in the Baseline (continued)

CAMU	Purpose of CAMU	PHCs/Waste Treatment in the Baseline	Assessment Against Treatment Amendments	Unit Design in the Baseline	Assessment Against Unit Design Amendments
EPA REGION 5					
Beazer East, Inc. Carbondale, Illinois ILD000819946	Disposing of remediation wastes including historic waste pile, stream sediments, and soils.	Has PHCs. No treatment is proposed, however, wastes are of very low mobility and will be disposed of in a unit meeting MTRs.	Consistent when adjustment factor E(5) is applied	Unit will have groundwater monitoring, composite liner, leachate collection, and a cap.	Consistent
BP Chemicals, Inc. Lima, Ohio OHD042157644	Treating and disposing of contaminated soils and small amounts of debris.	Cannot determine if PHCs present. Treatment is designed to render the waste nonhazardous.	Consistent, or, if minimum treatment standard not met, consistent when adjustment factor B is applied	CAMUs meet RCRA Subtitle C liner, leachate collection, cap, and groundwater monitoring criteria for new units.	Consistent
Ford Motor Company - Monroe Stamping Plant Monroe, Michigan MID005057005	Treating and disposing of large volumes of hazardous and nonhazardous sludges.	Possible PHCs. Treatment via stabilization meets LDR or meets soil-LDRs.	Consistent	Unit is existing and unlined. Includes perimeter slurry wall, inward hydraulic gradient, leachate collection system, composite cover, and groundwater monitoring.	Consistent
Saxon Metals Corporation (formerly Federated Metals Corporation) Whiting, Indiana IND005444104	Disposing of remediation waste.	Possible PHCs. Phytocover will facilitate reduction in concentration to acceptable levels.	Consistent when adjustment factor B is applied	Existing unit will have a phytocover with sampling, analysis, and monitoring program. If groundwater monitoring demonstrates that the cover fails, a RCRA cap will be installed.	Consistent
USS Lead Refinery, Inc. East Chicago, Indiana IND047030226	Disposing of lead and arsenic contaminated soils with low levels of organics.	Has PHCs. 280,000 cubic yards of remediation wastes. No treatment is proposed.	Consistent when adjustment factor A is applied	Existing unit. Unit will have Subtitle C cap, slurry wall, inward hydraulic gradient, and groundwater monitoring system.	Consistent
U.S. Steel - Gary Works Gary, Indiana IND005444062	Disposing of contaminated sediments.	Has PHCs. No treatment prior to disposal.	Consistent when adjustment factor A or E(3) is applied	New unit with double liner, leachate collection, groundwater monitoring, and a cap (consistent with Subtitle C standards).	Consistent
EPA REGION 6					
Chevron USA, Inc. Port Arthur, Texas TXD008090409	Disposing of stabilized remediation wastes.	One possible PHC (maximum concentrations close to potential PHC levels). Wastes stabilized.	Consistent, or, if needed, consistent when adjustment factor E(4) is applied	Unit is existing surface impoundment. Unit will be capped, and have groundwater monitoring.	Consistent

Exhibit 3-1: Information on Treatment and Unit Design Standards for Permanent CAMUs in the Baseline (continued)

CAMU	Purpose of CAMU	PHCs/Waste Treatment in the Baseline	Assessment Against Treatment Amendments	Unit Design in the Baseline	Assessment Against Unit Design Amendments
GATX Corporation Galena Park, Texas TXD026481523	Treating and disposing of remediation wastes.	Cannot determine if PHCs present. Biotreatment and stabilization used as treatment. Meets either 10xUTS level or Texas Risk-Based levels.	Consistent, or, if needed, consistent when adjustment factor B or E(1) is applied	Existing RCRA surface impoundment, unlined. Will have cap and groundwater monitoring.	Consistent
Sandia National Laboratories, U.S. Dept. of Energy Albuquerque, New Mexico NM5890110518	Treating and disposing of remediation wastes.	Has PHCs. Soil washing/ stabilization for inorganics and low temperature thermal desorption for organics. Treatment to 90-95% reduction or health-based standard. Highly contaminated wastes sent off-site.	Consistent	CAMU double liner and leachate collection system, groundwater monitoring, and Subtitle C cap.	Consistent
Texas Eastman (formerly Eastman Chemical Co., Texas Eastman Division) Longview, Texas TXD007330202	Treating and disposing of contaminated sludges and soils.	Has PHCs. Biotreatment of contaminated soils and sludges to levels that render them no longer hazardous according to Texas Risk Reduction Rules.	Consistent, or, if needed, consistent when adjustment factor B is applied	CAMU was an existing surface impoundment. Cap and groundwater monitoring.	Consistent
WJ Smith Wood Preserving Company Denison, Texas TXD066368879	Bio-treating and disposing of soils contaminated with creosote.	Cannot determine if PHCs are present. Biotreatment of soils to non-hazardous levels according to Texas Risk Reduction Rules.	Consistent, or, if needed, consistent when adjustment factor B is applied	Double liner, leachate collection system, cap, and groundwater monitoring.	Consistent
Zinc Corporation of America (ZCA) Bartlesville, Missouri OKD000829440	Treating and disposing of soils, debris, and sludges.	PHCs possibly for only small volumes of wastes. All wastes stabilized.	Consistent with treatment standard, or with adjustment factors E(1) or E(4) for small volumes of waste	CAMU was an existing surface impoundment with no liner. Unit will have groundwater monitoring and cap.	Consistent
EPA REGION 7					
Cherokee County Site Cherokee County, Kansas KS0001912104	Disposing of lead-contaminated soils from cleanup of off-site residences.	PHCs not present, except for very small volumes. No treatment is occurring prior to disposal.	Consistent, except perhaps for very small volumes	CAMU is in contaminated mine waste disposal area, which is fenced in, vegetated, and has erosion control features.	Under the rule, might require additional cap design features.
Jasper County Site (a.k.a. Oronogo-Duenweg Mining Belt Site) Joplin, Missouri MOD980686281	Disposing of lead-contaminated soils from cleanup of off-site residences. Treatment of top soil layer to reduce mobility.	Has PHCs. Pilot study conducted determined that treatment would be overly expensive.	Consistent when adjustment factor A or E(5) is applied	Unit is in already contaminated mine waste disposal area, which is fenced in, vegetated, and has erosion control features.	Under the rule, might require additional cap design features.

Exhibit 3-1: Information on Treatment and Unit Design Standards for Permanent CAMUs in the Baseline (continued)

CAMU	Purpose of CAMU	PHCs/Waste Treatment in the Baseline	Assessment Against Treatment Amendments	Unit Design in the Bascline	Assessment Against Unit Design Amendments
EPA REGION 8					
ASARCO, Inc. East Helena, Montana MTD006230346	Disposing of contaminated soils and remediation wastes.	Has PHCs. No treatment is proposed, however, PHCs are of low mobility and the unit provides long-term disposal protection.	Consistent when adjustment factor A is applied	Unit has groundwater monitoring, liner, leachate collection, and cap.	Consistent
Burlington Northern Santa Fe Railway (BNSF), (formerly BN Paradise Tie Plant) Paradise, Montana MTD000716787	CAMU in two parts: LTU portion intended for treatment of remediation wastes. Former surface impoundment portion intended for product recovery wells.	Possible PHCs. Treatment is occurring to meet permit-required treatment standards.	Consistent, or, if needed, consistent when adjustment factor B is applied	Existing land treatment unit will have vegetative cap. Groundwater monitoring will be conducted.	Consistent
Cenex Harvest States Cooperative Laurel Refinery Laurel, Montana MTD006238083	Treating and disposing of remediation wastes.	PHCs not likely to be present. Treatment is occurring to meet permit-required treatment standards.	Consistent, or, if needed, consistent when adjustment factor B is applied	Existing land treatment unit will have vegetative cap. Groundwater monitoring will be conducted.	Consistent
Rocky Mountain Arsenal Commerce City, Colorado CO8210820769	Disposing of remediation wastes, mainly construction/demolition debris.	PHCs not likely to be present, except possibly for small volumes of pesticide contaminated soils. No treatment is proposed.	Consistent with treatment standard (no PHCs); or if PHCs in pesticide contaminated soils, possibly consistent when adjustment factor E(1), E(3) or E(5) is applied	Two units: double and triple- lined RCRA/TSCA landfills, with cap and groundwater monitoring.	Consistent
Union Pacific - Laramie Tie Plant Site Cheyenne, Wyoming WYD003926862	Disposing of remediation wastes.	No PHCs present. Considering treatment options.	Consistent	Existing unit with Subtitle C cap, slurry wall, groundwater monitoring; cap may be designed to promote bioremediation.	Consistent, or use alternate cap standard at 264.552(iv)(B).
EPA REGION 9					
IT Vine Hill Complex Martinez, California CAD000094771	Two CAMU units for treating and disposing of remediation wastes.	Cannot determine if PHCs present. Wastes with metals and organics were solidified after dewatering. Leachate and contaminated groundwater were evaporated consistent with risk assessment; the remaining sludges were solidified.	Consistent, or, if any organic PHCs, consistent when adjustment factor A is applied	Existing unit with RCRA cap, groundwater monitoring, and slurry wall. Second CAMU on top of an existing RCRA landfill which had a cap and liner; additional liner and leachate collection added to unit. Will be closed with RCRA cap.	Consistent

Impacts from Treatment and Unit Design Provisions for Permanent CAMUs

EPA evaluated the 39 permanent baseline CAMUs approved (or soon to be approved) to date to identify any treatment and design changes necessary to be consistent with the Amendments. Based on this evaluation, three CAMUs are likely to require additional treatment or unit design: (1) Blackman Uhler Chemical Company (Region IV); (2) Cherokee County Site (Region VII); and (3) Jasper County Site (Region VII). For each of these sites, EPA estimates the incremental cost associated with achieving consistency with the Amendments. For more information on these sites, see the *CAMU Site Background Document.*

Initial Evaluation of Blackman Uhler Chemical Company Against CAMU Amendments: It is EPA's best professional judgement that this CAMU likely would not be consistent with the CAMU Amendments. There was limited information available to assess consistency for this CAMU. Many of the constituents present would likely be designated PHCs. While cost-effective treatment will be employed to address the SVOCs, it will likely not meet the treatment standards for all of the potential PHCs. It is unclear whether the remaining constituents would be of very low mobility, and therefore uncertain whether adjustment factors E(1) or E(4) would apply. Therefore, EPA has estimated the costs of lining the CAMU in order to apply adjustment factor E(2) (§264.552(e)(4)(v)(E)(2)). The groundwater monitoring and cap appear to be consistent with the Amendments.

Although the CAMU is an existing unit, a liner is likely to be required as an alternative minimum design standard under §264.552(e)(3)(ii) to prevent the migration of hazardous constituents from the untreated contaminated soil placed in the CAMU. EPA, therefore, calculates the additional cost of adding a liner to this CAMU.

The rule requires that a composite liner is a 30 mil liner on at least two feet of soil with a hydraulic conductivity of 1×10^{-7} cm/sec. For Blackman Uhler, the volume to be excavated is 300 ft x 240 ft x 6 ft, or 432,000 ft^3, and the area to be lined is 72,000 ft^2. The costs for the liner base, liner protection, two 40 mil geomembrane liners, and excavation are shown in Exhibit 3-2.[5]

[5] The unit costs are taken from the 1995 CKD Monofill Model documentation and have been adjusted for inflation to reflect estimated 2001 dollars.

Exhibit 3-2: Estimated Incremental Cost for Consistency Changes at Blackman Uhler under Amendments

	Unit Cost	Affected Area/Volume	Capital Cost
Excavation	$0.19/ft^3	432,000 ft^3	$82,080
Liner base (compacted soil)	$0.25/ft^3	72,000 ft^3	$18,000
40 mil geomembrane liner	$0.62/ft^2	72,000 ft^2	$44,640
Liner protection (compacted soil)	$0.25/ft^3	72,000 ft^3	$18,000
40 mil geomembrane liner	$0.62/ft^2	72,000 ft^2	$44,640
Liner protection (compacted soil)	$0.25/ft^3	72,000 ft^3	$18,000
		Total Cost	**$225,360**

Therefore, EPA estimates the total incremental costs for the liner potentially required to make this site consistent with the Amendments to be approximately $225,000 (annualized over 20 years at seven percent interest is approximately $21,000).

Initial Evaluation of Cherokee County Site Against CAMU Amendments: It is EPA's best professional judgment, based on available site data, that this CAMU likely would not be consistent with the amended CAMU design requirements. Only very small volumes of principal hazardous constituents would likely be determined to have lead in concentrations that would warrant designation of PHCs in the waste; these volumes likely would be identifiable from the analytical approach that assessed concentrations on a property-by-property basis prior to excavation.

The soils placed on the mining wastes greatly reduce the level of lead exposed at the surface and the permeability of surface materials over an area that has acid mine drainage contamination. The site continues to be subject to cleanup, and the CAMU surficial materials might be revisited or addressed as part of future site-wide cleanup actions. The lack of a cap is not consistent with the CAMU Amendments unless the CAMU was considered to be active (i.e., had not gone through closure) for an indefinite time. Therefore, EPA calculates the additional cost of adding a cap to this CAMU.

This site uses a permanent CAMU to dispose of approximately 174,000 yd^3 of relatively low levels of metals-contaminated soils (primarily lead and cadmium). The CAMU is placed on top of an area that previously had not revegetated from past waste management activities. The area was fenced after the waste was deposited. Using the most recent capping cost data from

work performed for EPA in late 1996[6] in support of the Hazardous Waste Identification Rule (HWIR): Process Waste Rule, adjusted for inflation, the analysis of costs is as follows:

$174{,}000\ yd^3 \times 1.5\ tons/yd^3 = 261{,}000$ tons of contaminated soil

Using this volume, 261,000 tons, the HWIR Process Waste analysis estimates costs between $2.46 and $4.61 per ton for a clay final cover.[7] The following calculation yields the cost range for a cap at the Cherokee County site:

$2.46 to $4.61 per ton x 261,000 tons = $642,060 to $1,203,210

Therefore, the total incremental costs for the cap required to make this site consistent with the Amendments range between $642,000 and $1,203,000 (annualized over 20 years at seven percent interest is $61,000 to $114,000).

Initial Evaluation of Jasper County Against CAMU Amendments: It is EPA's best professional judgment, based on available site data, that this CAMU likely would not be consistent with the CAMU Amendments. Much of the waste likely would be determined to have lead in concentrations that would warrant designation of PHCs in the waste. Treatment was considered, but was deemed overly costly, which is consistent with adjustment factor A (§264.552(e)(4)(v)(A)). The lack of treatment also might be consistent with adjustment factor E(5) because of the very low mobility of the lead (§264.552(e)(4)(v)(E)(5)). (With adjustment factor E(5), an alternate design approach potentially would take into consideration the significant contamination associated with the existing mine tailings and the lack of use of groundwater at the location (§264.552(e)(4)(v)(E)(5)).

The soils placed on the mining wastes greatly reduce the level of lead exposed at the surface and the permeability of surface materials over an area that has acid mine drainage contamination. The site continues to be subject to cleanup, and the CAMU surficial materials might be revisited or addressed as part of future site-wide cleanup actions. The lack of a cap is not consistent with the CAMU Amendments, unless the CAMU was considered to be active (i.e., had not gone through closure) for an indefinite time. EPA therefore calculates the additional cost of adding a cap to this CAMU.

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[6] Memorandum from DPRA to Industrial Economics, Inc., Hazardous Waste Identification Rule for Process Wastes: Waste Management Cost Data, Exhibit 4. This memorandum is included in the docket for this rulemaking.

[7] Exhibit 4 of the HWIR Process Waste memo (see footnote 6) links capping costs to annual tons disposed based on a 20-year life of the unit. Therefore, the 261,000 tons of contaminated soils disposed in the CAMU is divided by 20 in order to use properly the costs presented in this Exhibit. This calculation yields approximately 13,000 tons per year. This figure falls between the data shown for 3,000 tons per year and 30,000 tons per year in the exhibit (based on a landfill without daily cover). Therefore, a range of capping costs was estimated using $2.28 to $4.27 per ton, adjusted to $2.46 to $4.61per ton in 2001 dollars.

This site uses a permanent CAMU to dispose of lead-contaminated soils. Approximately 50,000 to 60,000 yd^3 of waste were placed in the CAMU. Using the higher end of the volume range, the capping costs follow a similar calculation to that performed above for the Cherokee County Site.

$$60{,}000\ yd^3 \times 1.5\ tons/yd^3 = 90{,}000\ tons\ of\ waste$$

Using this volume, 90,000 tons, the HWIR Process Waste analysis provides for an estimate of $2.46 per ton for a clay final cover.[8] This calculation yields a cost for the cap needed.

$$\$2.46\ per\ ton \times 90{,}000\ tons = \$221{,}400$$

Therefore, EPA estimates the total incremental costs for the cap required to make this site consistent with the Amendments to be approximately $221,000 (annualized over 20 years at seven percent interest is approximately $21,000).

The final consistency determinations, along with the cost estimates, for all 39 permanent CAMUs are presented in Exhibit 3-3. For the 39 permanent CAMUs, EPA estimates that 26 facilities potentially would require using one of the adjustment factors to achieve consistency with the Amendments. The potential use of adjustment factors was considered only where such use would be consistent with the circumstances required for each adjustment factor. Of the five adjustment factors:

- Adjustment factor A for technical impracticability was estimated to be applied eight times.
- Adjustment factor B addressing consistency with site cleanup goals was estimated to be applied possibly 13 times to achieve consistency.
- Adjustment factor E, providing adjustment from the treatment standards based on chemical and physical properties of the waste and the long-term protection offered by the unit, was estimated to be applied possibly 11 times to achieve consistency.

The estimated frequency of use for the individual adjustment factors does not equal the overall number of facilities using adjustment factors because the Agency identified optional adjustment factors at several facilities.

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[8] Exhibit 4 of the HWIR Process Waste memo (see footnote 6) links capping costs to annual tons disposed based on a 20-year life of the unit. EPA divided the 90,000 tons of waste disposed in the CAMU by 20, yielding approximately 4,500 tons per year. This figure roughly corresponds to the 3,000 tons per year in the exhibit (based on a landfill without daily cover). Therefore, the capping costs were estimated using $2.28 per ton, adjusted to $2.46 in 2001 dollars.

As shown in Exhibit 3-3, the analysis revealed three facilities for which the unit design used in the original CAMU decision appears inconsistent with the Amendments. In two cases, a final cap likely would be required to achieve consistency with the Amendments. The third CAMU likely would require a liner. EPA estimates costs for these caps based on the specific information for the given facility. Estimated costs for the cap at one facility range from $642,000 to $1,203,000, and costs for the cap at the other facility are approximately $221,000. As noted above, EPA estimates costs for the liner to be $225,000.

Exhibit 3-3: Comparisons of Baseline Practices and Post-Regulatory Requirements for Permanent CAMUs

CAMU Comparison: Baseline to Post-Regulatory	Number of CAMUs	Significance of Differences	Estimated Incremental Impact
Treatment and Unit Design Consistent With Post-Regulatory Requirements	36	N/A	N/A
Treatment Not Consistent With Post-Regulatory Requirements	0	N/A	N/A
Unit Design Not Consistent With Post-Regulatory Requirements	3	Two facilities may have required additional cap design features.[1] One facility may have required a liner.	Cap costs: 1. $642,000 to $1,203,000 2. $221,000 Liner costs: 3. $225,000 **TOTAL:** **$1,088,000 to $1,649,000**
Treatment and Unit Design Not Consistent with Post-Regulatory Requirements	0	N/A	N/A

Note:

1 These two CAMUs address the disposal of off-site soils contaminated with lead that resulted from smelting operations. Both facilities remain subject to long-term maintenance and periodic review. See *CAMU Site Background Document.*

In order to employ these figures to determine the potential impacts from the treatment and unit design amendments on CAMUs approved in the future, EPA calculates an average incremental cost associated with these requirements for permanent CAMUs. The Agency then applies this cost to the number of permanent CAMUs expected to be approved in the future. EPA estimates the total costs for the design requirements to make the three CAMUs consistent with the Amendments to be between $1,088,000 and $1,649,000. The total costs for the three permanent CAMUs divided by the total number of permanent CAMUs results in the following average incremental cost of the amended rules:

$\frac{\$1,088,000 \text{ to } \$1,649,000}{39 \text{ permanent CAMUs}}$ = $27,897 to $42,282 per permanent CAMU

EPA then applies these incremental costs of approximately $28,000 to $42,000 per permanent CAMU to the expected number of permanent CAMUs in the future. As discussed in Section 2.2, EPA projects a rate of five permanent CAMUs per year. Multiplying the incremental cost per permanent CAMU by the number of expected permanent CAMUs per year results in:

$28,000 to $42,000 x 5 permanent CAMUs = $140,000 to $210,000 per year

Thus, the total estimated incremental costs associated with the treatment and design standards for permanent CAMUs range from approximately $140,000 to $210,000 per year. The Agency believes that these estimates reasonably cover the additional requirements to achieve such consistency with the standards. EPA does not consider in this analysis any changes in the number of CAMUs approved per year that could result from the rule (see Chapter 4).

Limitations of the Analysis of Treatment and Unit Design Standards for Permanent CAMUs

As stated above, these comparisons reflect facility information regarding the types of contaminants, the treatment and unit design standards achieved, and other relevant circumstances surrounding the use of CAMUs. However, as the actual application of these provisions at any given site will involve complex judgment calls, it is difficult to assess with certainty how these provisions will operate. Such comparisons are site-specific in nature and subject to discretion regarding the approach taken and the use of adjustment factors and alternative standards.

Several commenters on the proposed rule believed that the amended treatment and unit design standards for permanent CAMUs are too prescriptive and stringent. According to the Agency's analysis, however, the 39 existing permanent CAMUs are essentially meeting the treatment and design standards in the baseline. EPA estimates relatively minor incremental costs associated with these amended standards. One commenter acknowledged that the existing permanent CAMUs analyzed for the proposed rule analysis "would generally meet the revised standards." However, the commenter believed that this stringent implementation of the existing CAMU rule was, at least in part, the effect of the "litigation cloud" resulting from the legal challenge to that rule. They provided no evidence in support of such a claim. The Agency generally believes that the types of remedies seen at the CAMUs approved to date represent the logical outcome of a responsible implementation of the 93 CAMU rule and reflect EPA's intentions in that rule. However, as stated in Chapter 1, the Agency believes that the clarification of EPA's intentions provided in the CAMU Amendments is preferable as a matter of public policy.

EPA believes that there may be minor costs not fully accounted for in this analysis in the actual implementation of the Amendments. For example, the Amendments may result in additional lab costs for testing of PHCs or operation of treatment technologies for a longer period of time to lower the levels reached for a PHC at a given site. Similarly, many of the CAMU remedies in the baseline include treatment of hot spots off-site; this practice may be used at additional facilities in cases where small volumes of waste are designated as PHCs. However, overall, EPA believes that the incremental costs associated with these requirements are captured in the above analysis.

3.4 Incremental Impacts from Treatment and/or Storage Only CAMU Provisions

EPA assesses the incremental impacts associated with the use of treatment and/or storage only CAMUs. A discussion of the baseline and post-regulatory requirements and the incremental impacts resulting from the rule is included below.

Treatment and/or Storage Only CAMUs in the Baseline

The 1993 CAMU rule provisions did not contain standards specific to treatment and/or storage only CAMUs. However, data in the *CAMU Site Background Document* indicate that eight treatment and/or storage only CAMUs were approved in the baseline and were generally used for short-term treatment or storage of wastes at a site. These data allow the Agency to assess the potential for incremental impacts resulting from the Amendments as they address treatment and/or storage only CAMUs. These data are presented in Exhibit 3-4.

Treatment and/or Storage Only CAMUs Under the Amendments

The CAMU rule establishes specific standards for treatment and/or storage only CAMUs. There are two categories of treatment and/or storage only CAMUs in the Amendments. Treatment and/or storage only CAMUs that comply with the time limit established by EPA in the staging pile regulations (see §264.554(d)(iii), (h), and (i)) would be subject to the performance and technical standards for staging piles in lieu of the permanent CAMU unit requirements. However, treatment and/or storage only CAMUs that exist longer than these limits would be subject to the unit requirements for permanent CAMUs (see discussion in Section 3.2.2). The time limit for this second category of CAMUs is expected to be years, not decades.

Because these treatment and/or storage only CAMUs would not be approved for final disposal, the treatment requirements established in the rule do not apply for the wastes managed in these CAMUs. However, the Regional Administrator would not be prevented from requiring waste treatment in such a CAMU as part of the overall remedy decision.

Exhibit 3-4: Information on Treatment and Unit Design Standards for Treatment and/or Storage Only CAMUs in the Baseline[9]

CAMU	Purpose of CAMU	Unit Design in the Baseline	Assessment Against Unit Design Amendments
EPA REGION 1			
Remington Arms Company, Inc. (formerly Sporting Goods Properties, Inc. and Lake Success Business Park) Bridgeport, Connecticut CTD001453216	Treating lead contaminated soils by mechanical separation and stabilization and storing of wastes.	Existing unit excavated for use as a CAMU with clay/geosynthetic composite liner and berms and groundwater and air monitoring and dust suppression measures.	Consistent
EPA REGION 4			
Cavenham Forest Industries Mobile, Alabama ALD057226904	Bio-treating contaminated soils.	Unit lined with 60 mil composite liner, leachate collection system.	Consistent when the alternate liner standard 264.552(e)(3)(ii)(A) is applied
Cavenham Forest Industries Gulfport, Mississippi MSD057226961	Staging and treating soils and other wastes. Biodegradation of soils and other wastes primarily contaminated with K001 waste to meet risk-based levels.	Concrete and asphalt pads used for treatment storage areas. Groundwater monitoring.	Consistent
General Timber, Inc. Sanford, North Carolina NCD057034449	Treating soil contaminated with wood treating wastes to health-based levels.	Unit has composite liner and groundwater monitoring.	Consistent
EPA REGION 5			
Inland Steel East Chicago, Indiana IND005159199	Treating, handling, and storing of mostly non-hazardous remediation wastes.	Existing units. Short intervals of waste management. Management controls include cover, run-on, runoff, and leachate controls, and groundwater monitoring, as necessary.	Consistent
RMI Titanium Extrusion Plant Ashtabula, Ohio OHD980683544	Treating wastes from evaporation pond and other SWMUs. Treated to health-based levels. Treatment in non-land based units; duration 6 months to 2 years.	Existing unit used for staging and treatment area; treatment in above ground units.	Consistent
EPA REGION 7			
Iowa Army Ammunition Plant Middletown, Iowa IA7213820445	Temporary storing of contaminated soils until proper treatment method can be determined.	New unit will have composite liner with leachate collection and groundwater monitoring.	Consistent
EPA REGION 8			
Flying J, Inc. Williston, North Dakota NDT390010049	Storing and treating remediation wastes to health-based levels.	CAMU located in highly contaminated area that is undergoing remediation. Groundwater monitoring.	Consistent when the alternate liner standard 264.552(e)(3)(ii)(B) is applied

[9] This table summarizes information presented in the *CAMU Site Background Document* and, for the purpose of this Exhibit, is abbreviated. It is solely meant to present a general picture of the information the Agency had on existing CAMUs and therefore should not be relied upon in making judgments regarding any individual CAMU decisions. For more information (including any qualification on the conclusions reflected here), refer directly to the *CAMU Site Background Document*.

The staging pile standards at §264.554(j) and (k) would be the closure standards for treatment and/or storage only CAMUs that are located in previously contaminated areas and previously uncontaminated areas, respectively.

Incremental Impacts for Treatment and/or Storage Only CAMUs

EPA assesses the incremental impacts from these provisions with respect to current baseline implementation of the CAMU rule. EPA performs this assessment in a manner similar to that described above for permanent CAMUs (see Section 3.3), using the historical data on treatment and/or storage only CAMUs in the *CAMU Site Background Document* to project the impacts from these provisions on future CAMUs. In this analysis, EPA does not consider any changes in the number of CAMUs approved per year that may result from the rule.

Impacts Estimated from the Treatment and/or Storage Only CAMU Provisions

EPA assessed that the baseline practices at all eight treatment and/or storage only CAMUs were consistent with the post-regulatory requirements for these CAMUs in the Amendments. No treatment and/or storage only CAMUs were estimated to require additional steps to achieve consistency with the Amendments. However, EPA acknowledges the possibility that, due to the variability of site characteristics and the limitations of the available data for the given CAMUs, additional negligible costs could be incurred at any given facility.

Limitations on the Analysis of Treatment and/or Storage Only CAMUs

As stated above, EPA made these comparisons based upon facility records regarding the types of contaminants, the treatment and unit design standards achieved, and other relevant circumstances surrounding the use of CAMUs. However, as the actual application of these provisions at any given site would involve complex judgment calls, it is difficult to assess with certainty how these provisions would operate. Such comparisons are site-specific in nature and subject to discretion regarding the approach taken and the use of adjustment factors and alternative standards. Therefore, EPA acknowledges that these cost estimates are subject to the limitations inherent in such a modeling effort.

EPA believes that, in the actual implementation of the Amendments, there may be minor costs not fully accounted for in this analysis. For example, the Amendments may result in additional lab costs for testing of PHCs. However, overall, EPA believes that the costs resulting from the requirements for treatment and/or storage only CAMUs are negligible.

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Chapter 4: Potential Change in CAMU Use

By amending the CAMU rule, the Agency intends to resolve the CAMU litigation. As discussed in Chapter 1, EPA believes that the uncertainties surrounding CAMU use resulting from the litigation have reduced the number of CAMUs employed in remedies over the past eight years. Therefore, resolving the litigation could increase the use of CAMUs in the future. However, there are a number of factors that affect the potential for changes in CAMU use. Because of the complexity involved in analyzing the expected changes to CAMU use, the Agency has prepared a bounding analysis addressing the direction and order-of-magnitude impacts of these changes. These estimates provide a picture of the potential impacts from changes in CAMU usage and do not represent a part of EPA's estimate of the actual impacts from the rule.

This Chapter discusses:

4.1 Incremental Change in the Number of CAMUs Approved Annually

4.2 Cost Impacts from These Changes

What are the Main Findings from this Chapter?

This bounding analysis examines the potential for incremental impacts as a result of changes in CAMU usage attributable to the Amendments. Immediately following promulgation, the factors influencing potential changes in CAMU use are too uncertain and complex to assign a magnitude or direction to the resulting impacts. For the period 2003 through 2006, EPA develops potential impacts under an increased CAMU use scenario and a decreased CAMU use scenario. EPA projects a potential increase or a potential decrease of five CAMUs per year. This range reflects the uncertainty regarding the relative importance of the various factors affecting changes in CAMU use. This incremental change results in cost impacts varying from a savings of $4.5 million per year to a cost of $4.5 million per year.

4.1 Incremental Change in the Number of CAMUs Approved Annually

This section discusses the baseline and post-regulatory factors that influence the use of CAMUs in remedial decisions.

4.1.1 Issues Related to Baseline CAMU Usage

EPA designed the 1993 CAMU rule to provide incentives for remediation by removing certain regulatory requirements that affect the management of hazardous remediation waste. The rule allowed facilities to manage hazardous remediation waste in a CAMU without triggering the Land Disposal Restrictions (LDRs). Furthermore, it exempted CAMUs from the minimum technology requirements (MTRs). The rule, however, established performance standards for the

design, operation, and closure of CAMUs and provided the site-specific flexibility that EPA believes is necessary to encourage remediation.

The 1993 CAMU Regulatory Impact Analysis (RIA) that accompanied the rule projected the approval of roughly 75 CAMUs per year with an annual cost savings of roughly $2 billion.[1] In that RIA, CAMU experts reviewed facility data from a randomly stratified sample of 79 corrective action facilities in the corrective action universe. For each facility, the experts determined when a CAMU would be used in remediation and what the cost implications of CAMU use would be against a baseline of remediation without a CAMU.

EPA was sued on the CAMU rule shortly after its promulgation. The resulting uncertainty surrounding the viability of the CAMU rule, along with other factors discussed in Chapter 1 (e.g., the increased use of Areas of Contamination (AOCs) and staging piles, the introduction of the Phase IV Land Disposal Restriction (LDR) soil treatment standards, and the stabilization initiative in corrective action), led to considerably fewer CAMUs than the Agency originally anticipated.

The actual pace of CAMU usage, since promulgation of the rule, is calculated in Chapter 2 of this document using the data from the *CAMU Site Background Document*. This site summary document provides information for the 47 CAMUs approved or about to be approved under the existing rule. The usage rate is calculated as the total number of CAMUs approved to date (or, in a few cases, near approval) divided by the number of years the rule has been in place. The rule has been in place since 1993, although the first year was not quite a full year, and the analysis and final rule are expected to be completed before the end of 2001. EPA therefore uses eight years as a divisor to calculate the expected number of new CAMUs annually. The resulting estimated baseline CAMU usage (47 CAMUs/8 years) is approximately six CAMUs per year.

4.1.2 Issues Related to Post-Regulatory CAMU Usage

With the rule, the Agency intends to eliminate the uncertainty regarding the viability of the CAMU rule that resulted from the CAMU litigation. Such resolution could promote the increased use of CAMUs. However, for a number of reasons the Agency does not expect CAMU usage to approach the rate projected in the 1993 CAMU RIA (i.e., roughly 75 CAMUs approved per year).

The disparity between the 1993 RIA projections and the actual usage is likely the result of four factors.

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[1] This figure of 75 CAMUs per year is calculated from the 1993 CAMU RIA from the figures for the Expanded CAMU option assuming a 20-year duration (Regulatory Impact Analysis for the Final Rulemaking on Corrective Action Management Units and Temporary Units, EPA/OSW, January 11, 1993, page 3-4). This annual CAMU usage figure is never actually stated in the RIA and is a rough estimate calculated for purposes of this analysis.

- First, the 1993 RIA employed a baseline that is very different from the remedial setting which has existed in recent years. Chiefly, the RIA assumed significant excavation and treatment of remediation wastes, with heavy reliance on combustion technologies and little use of innovative treatment approaches. These innovative approaches are much more available and in use than was anticipated in the 1993 RIA, and tend to be less expensive than combustion technologies. Therefore, the pervasive demand for CAMUs to lower large remedial costs has not materialized as anticipated in the 1993 RIA.

- Second, due to its timing, the 1993 RIA estimates do not include impacts on CAMU use that resulted from various remedial policy developments such as the stabilization initiative or the use of environmental indicators. These developments have increased stabilization of sites and reduced excavation and treatment of wastes (in the short term). This shift created conditions that reduced the need to rely on CAMUs as much as had been estimated originally in the 1993 RIA. Additionally, the availability of alternatives to CAMUs, such as staging piles, AOCs, and the relaxation of treatment standards under the Phase IV LDR soil treatment rule may have decreased the demand for CAMUs compared to that projected originally.

- Third, given the historical rate at which facilities have progressed through the various stages of corrective action to reach a final remedy decision, the Agency thinks that the CAMU usage projections from the RIA were unrealistically high. The number of final remedy decisions at corrective action sites across the nation has not reached 75 per year. Therefore, it would be impossible to have an average of 75 CAMUs approved annually.

- Finally, the Agency believes that CAMU use has been dampened over the past eight years due to the uncertainty surrounding the use of CAMUs that resulted from the CAMU litigation.

With the CAMU rule Amendments, the Agency intends to resolve the uncertainty surrounding the use of CAMUs resulting from the "litigation cloud." This, however, does not address the other factors believed to have affected CAMU usage over the past eight years. Furthermore, EPA believes that additional factors should be accounted for to determine the potential impact of the rule on CAMU usage in the future, including the impact of the formalized approval process and the amended treatment and unit design standards.

With these issues in mind, the Agency prepares an order-of-magnitude bounding analysis that seeks to establish the general direction of change in CAMU usage and to quantify the impacts from such change. These estimates focus only on the potential for changes in the number of CAMUs approved annually and do not incorporate impacts from the formalized approval process or the amended treatment and unit design requirements. These estimates

provide a picture of the potential savings from such a change in CAMU usage and do not represent estimates of the actual impacts from the rule.

4.1.3 Assessment of Incremental Changes in CAMU Usage

This analysis examines the change in CAMU usage in the following three steps:

Step 1: Identify the Influences of the Amendments on CAMU Use: These factors are categorized as influences tending to increase or tending to decrease CAMU use with respect to the baseline. The identified influences reflect EPA's knowledge of the CAMU Amendments and the information collected in the expert contacts made for the approval process assessment in Chapter 2.

EPA believes that the following influences will *tend to increase* CAMU use:

(1) Removal of the "Litigation Cloud"/Uncertainty Regarding the Rule's Viability - The Amendments should resolve this uncertainty which is believed to be a primary factor limiting use of CAMUs.[2]

(2) Formalized Approval Process - The more formalized process in the Amendments for approving CAMUs and more specific treatment and unit design standards may encourage CAMU use in some cases. The rule provides a clear and established path for CAMU approval, which may benefit a facility that is considering remedial alternatives. Several of the CAMU experts contacted for the process cost assessment in Chapter 2 suggested including this factor.

EPA believes that the following influences will *tend to decrease* CAMU use:

(1) Increased Approval Process/Costs - The approval requirements in the CAMU Amendments are likely to increase the time and cost associated with CAMU approval. Some of the experts contacted for the approval process assessment and several commenters on the proposed rule suggested that the added process may be enough to discourage some facilities from pursuing use of a CAMU.

(2) Treatment and Unit Design Requirements - Several commenters on the proposed rule suggested that the more stringent treatment and unit design standards in the rule may discourage CAMU use at some facilities. However, according to the data on existing CAMUs approved, the treatment and unit design approaches being employed under the existing rule generally are consistent with the rule requirements.

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[2] See the GAO report *Hazardous Waste: Remediation Waste Requirements Can Increase the Time and Cost of Cleanups*, October 1997, pages 12 and 13.

Step 2: Develop a Framework for Assessing Potential Changes in CAMU Use: An assessment of the direction of the expected change in CAMU use resulting from the Amendments requires an assessment of the influences discussed above.

- *Grandfathering Window*: Began with publication of the proposed grandfathering provision in the Amendments and ends with the effective date of the Amendments, approximately 1-1/2 years in length, from August 2001 through December 2001. EPA's review of the CAMUs approved, or near approval, for the *CAMU Site Background Document* showed nine new CAMUs for this period.[3]

- *Early After Promulgation*: Begins on the effective date of the rule and ends one year after the effective date and generally represents an adjustment period for implementation of the rule.

- *Post-Promulgation Equilibrium*: Begins one year after the effective date of the rule and ends approximately five years after the effective date of the rule, during which time the Agency believes there will be approximate equilibrium with respect to the influences from the rule on CAMU use. The five-year duration represents the rough time period for which the Agency intends to project impacts from the rule.

EPA made the following assumptions in assessing the influences identified in Step 1 with respect to these three time periods:

- The main influences resulting from the rule are considered in this analysis. EPA believes that a number of less significant factors may affect CAMU use. These factors, however, are not addressed in this bounding analysis.

- Each main influence is assessed with respect to the baseline of the existing CAMU rule as implemented currently. Thus, influences that may affect CAMU usage but are not attributable to the Amendments are not addressed (e.g., implementation of the environmental indicator goals).

- The general direction of the influence, other things being equal, is taken as determinative for its categorization. EPA recognized, however, that the actual effect a particular influence has at any given facility will not necessarily follow the overall direction the influence will have on the CAMU universe.

[3] A potential increase in CAMU use during this period was estimated in the *Economic Analysis* for the proposed rule to be 5 to 10 CAMUs over the baseline (which was six CAMUs per year). Based on the *CAMU Site Background Document* data showing nine CAMUs approved during this period, there was in reality no increase in CAMU use over the baseline rate of six CAMUs per year.

Step 3: Assess Changes to the Baseline CAMU Usage: EPA assesses these changes for the three time periods discussed above.

This estimated change in CAMU use from the baseline is represented as a change in the number of CAMUs approved annually. EPA uses the data from the *CAMU Site Background Document* to estimate an annual baseline CAMU usage of six CAMUs.[4] While the baseline CAMU approval rate is not used directly in estimating the changes for a given time period, it provides a context for what would represent a significant change in CAMU usage. See Exhibit 4-1 for a summary of changes. Because EPA had no data on exactly how these influences will affect CAMU usage, these estimates represent rough projections.

Exhibit 4-1: Incremental Changes in CAMU Usage

Assessment of Change in CAMU Usage	Time Period		
	Grandfathering Window (Aug 2000 through Dec 2001; about 1-1/2 years)[1]	**Early After Promulgation (2002: 1 year)**	**Post-Promulgation Equilibrium (2003 through 2006; 4 years)**
Incentives/Disincentives	* Grandfathering provisions: potential resolution of the litigation cloud, without more stringent treatment and unit design requirements and additional approval process steps from the Amendments.	* CAMU use uncertain due to proximity of time period with grandfathering window. * Resolution of litigation cloud. * Adjustment period for process and treatment and unit design Amendments.	* Formalized approval process and more specific treatment and unit design standards. * Resolution of litigation cloud. * Additional approval process time and costs, and more stringent treatment and unit design requirements.
Resulting Shift in CAMU Use	* No increase over baseline of existing rule according to *CAMU Site Background Document.*	* Direction and magnitude of potential change highly uncertain.	* Potential *increase or decrease of five CAMUs per year* from baseline of existing rule.

Note:

1 EPA assesses the actual increase in CAMU use during this period in the review of existing CAMUs conducted for the final rule *CAMU Site Background Document.*

Grandfathering Window: During this time, EPA believed that CAMU use would increase over the baseline due to facilities taking advantage of the grandfathering provisions in

[4] Of the six CAMUs approved annually in the baseline, the data show that one is a treatment and/or storage only CAMU, as discussed in Chapter 2. However, this analysis does not address distinctions in permanent and treatment and/or storage only CAMUs. Therefore, for purposes this analysis all six are assumed to be permanent. Please see Chapter 2 of this report for details on the calculation of annual baseline CAMU usage.

the rule. Some state and Regional experts contacted for the analysis in Chapter 2 expected increased interest in CAMUs during the grandfathering period. However, the Regions have identified only nine CAMUs that are approved or will be approved within this window. Nine CAMUs approved over a period of a year-and-a-half represents no change in CAMU use over the projected baseline of six CAMU approvals per year.

Early After Promulgation: EPA believes that the factors influencing potential changes in CAMU usage during this period are highly uncertain. Many site owner/operators may still be assessing the stability of the legal situation around CAMUs, comparing the new requirements to other options, and waiting to see how EPA Regions and states will exercise the adjustment factors. This gradual process may not be completed during this time period. Beside the factors identified above, EPA expected a reduction in CAMU usage due to the proximity of this period with the anticipated increase in CAMUs for the grandfathering window. This expected increase in CAMUs, however, did not occur. In general, these factors are too uncertain to be the basis for a projection of the direction or magnitude of changes in CAMU use.

Post-Promulgation Equilibrium: The direction of change in CAMU use during this period depends upon three factors:

- First, the resolution of the litigation should increase CAMU use, assuming, for purposes of this analysis, that the viability of the amended rule is clear.

- Second, the implementation of a more formalized approval process may also encourage CAMU use; yet, the increased time and costs of this process may discourage CAMU use.

- Third, the implementation of more specific treatment and design standards reduces the uncertainty about CAMU approval and thereby increase CAMU use. At the same time, these standards are more stringent than the existing rule and, therefore, may reduce CAMU use. Chapter 3, however, projects that the increased costs due to the new treatment and design standards will affect only a very small number of CAMUs.

For these reasons, EPA provides a range of estimates presenting the impacts that may result in the case of either scenario. EPA estimates a potential increase of five CAMUs per year or a potential decrease of five CAMUs per year against the baseline.

4.2 Cost Impacts from These Changes

Having assessed the changes in CAMU usage that may result from the rule, EPA quantifies the potential cost impacts for these changes. The cost savings from these changes are estimated using results from the 1993 CAMU RIA (see pages 3-9 of that report*). The RIA

* See footnote 1 in this Chapter.

analysis, prepared in support of the CAMU rule, estimated the cost savings at a random stratified sample of corrective action sites based on expert panel assessments of the costs for remediation with and without CAMUs. These figures were extrapolated to determine the national cost impacts for the CAMU rule. The RIA presented an annual average cost savings per CAMU of $0.5 million to $0.8 million per facility in 1992 dollars (changing the figures to 2001 dollars yields an annual cost savings per CAMU ranging from $0.6 million to $0.9 million).

This range is used for purposes of this analysis to estimate order-of-magnitude cost impacts resulting from the changes in CAMU usage due to the rule. The annual cost savings per CAMU figure presented in the 1993 RIA provided the only readily available data from which to quantify the impacts of a shift from remediation without a CAMU to use of a CAMU. The Agency, however, believes that this cost savings estimate could significantly overestimate actual savings due to the assumptions employed in the 1993 RIA regarding excavation and combustion of cleanup wastes. (The 1993 CAMU RIA is available in the docket for this rulemaking.)

Within each of the three time periods examined, a facility could shift either from not using a CAMU (baseline) to using a CAMU (post-regulatory), or using a CAMU (baseline) to not using a CAMU (post-regulation). In the case that a facility did not use a CAMU, a range of possible alternatives could be considered. For purposes of this analysis, the Agency brackets this range between "leaving waste in place" and "performing full remediation without a CAMU." As stated above, EPA employs the cost savings estimate from the 1993 RIA to model the cost savings for a shift from performing full remediation without a CAMU (baseline) to using a CAMU (post-regulatory). EPA does not possess data on either the possibility of a shift from leaving waste in place (baseline) to using a CAMU in remediation (post-regulatory) or the cost impacts associated with such a shift. Finally, EPA does not believe as a general rule that it is likely that the types of facilities currently using CAMUs will shift away from CAMU use as a result of the rule. The estimated per CAMU cost increases resulting from the rule are not anticipated to be significant enough to make use of a CAMU less beneficial than the next best alternative. However, in the Post-Promulgation Equilibrium period, EPA models the case of a shift from CAMU use (baseline) to full remediation without a CAMU (post-regulatory). While the Agency does not expect such a change, it is modeled below for illustrative purposes. The impacts from the changes in CAMU usage for the three time periods are assessed below according to these categories of change identified and discussed above (see Exhibit 4-2).

Exhibit 4-2: Incremental Change in CAMU Usage

Categories of Potential Change in CAMU Usage	Time Period		
	Grandfathering Window (Aug 2000 through Dec 2001; about 1-1/2 years)[1]	Early After Promulgation (2002; 1 year)	Post-Promulgation Equilibrium (2003 through 2006; 4 years)
Baseline: Full remediation (no CAMU) *Post-Regulatory:* CAMU	No Change in CAMU Use Found Based on Data in *CAMU Site Background Document*	Change highly uncertain	Potential for five facilities estimated (annual savings of $0.6 million to $0.9 million per facility)
Baseline: Leave wastes untouched (no CAMU) *Post-Regulatory:* CAMU	No Change in CAMU Use Found Based on Data in *CAMU Site Background Document*	Change highly uncertain	Potential for five facilities estimated (no cost information available)
Baseline: CAMU *Post-Regulatory:* Full remediation (no CAMU)	No Change Estimated	Change highly uncertain	Potential for five facilities estimated (annual cost of $0.6 million to $0.9 million per facility)
Baseline: CAMU *Post-Regulatory:* Leave wastes untouched (no CAMU)	No Change Estimated	Change highly uncertain	Potential for five facilities estimated (no cost information available)

Note:

1 EPA assesses the actual increase in CAMU use during this period in the review of existing CAMUs conducted for the final rule *CAMU Site Background Document.*

Grandfathering Window: For this time period, no additional costs or savings are estimated.

Early After Promulgation: For this time period, the changes are too uncertain to project.

Post-Promulgation Equilibrium: For this time period, the cost savings associated with a potential increase or decrease in CAMU usage of five CAMUs per year are estimated as:

5 CAMUs per year x $0.6 to $0.9 million per year per CAMU = $3.0 to $4.5 million per year

This estimate, ranging from a positive cost of $4.5 million per year to a savings of $4.5 million per year, is rough. While it is possible that the facilities that shift to or from CAMU usage under this scenario would be those that left waste untouched, cost figures on this shift are not available. The main competing influences in this time period are the removal of the uncertainty surrounding the litigation of the CAMU rule (assumed for purposes of this analysis)

and the potential dampening effect of the increased costs of the formalized approval process and treatment/unit design standards.

For illustrative purposes only, EPA estimates the total annual impacts of the rule, combining the estimates from a potential change in CAMU use with the estimates developed for the approval process changes (Chapter 2) and the treatment and unit design requirements (Chapter 3). The Agency develops an upper bound estimate by adding the high-end cost associated with a potential change in CAMU usage, $4.5 million per year, to the high-end of the total costs for the approval process ($242,400 per year) and treatment and unit design requirements ($210,000 per year). This summation yields an upper bound cost for the rule of $5.0 million per year. EPA develops a lower bound estimate of savings by adding the low-end impact associated with a potential change in CAMU usage, $4.5 million per year in savings, to the low-end of the total positive costs for the approval process ($77,200 per year) and treatment and unit design requirements ($140,000 per year). This summation yields a savings for the rule of approximately $4.3 million. Therefore, the bounding analysis provides a range from approximately $4.3 million in savings per year to $5.0 million in costs per year. This range of estimates for the bounding analysis is shown by year for the scope of the analysis in Exhibit 4-3.

Exhibit 4-3: Total Impacts For the Rule Including Changes in the Number of CAMUs Per Year: A Bounding Analysis (in millions of dollars)

Bounding Analysis Estimates	Impact Estimates for Each Year Within the Scope of Analysis					
	2001	2002	2003	2004	2005	2006
Impacts from CAMU Usage Changes (*Illustrative in Nature*)	No change estimated	Too uncertain to estimate	$4.3 savings - $5.0 cost	$4.3 savings - $5.0 cost	$4.3 savings - $5.0 cost	$4.3 savings - $5.0 cost

The question may be raised as to how this cost savings for increased CAMU usage in the bounding analysis compares with the $1 to $2 billion annual savings in the 1993 CAMU RIA. The 1993 RIA baseline represented facilities performing remediation under the corrective action requirements, generally excavating wastes and treating them in compliance with the LDRs via combustion technologies. Given the resulting high costs for such baseline remedial approaches, EPA presumed that the relief provided by the original CAMU regulation was widely applied in the post-regulatory case. Therefore, EPA estimated significant CAMU usage. The baseline for the CAMU Amendments was described by the historical data EPA obtained on those facilities that have approved CAMUs since the 1993 rule. The projections of the potential change in CAMU usage resulting from the Amendments roughly reflect these baseline CAMU usage figures. Therefore, the increase in CAMU usage that EPA projects in the post-regulatory case in the bounding analysis for the rule is low relative to the usage projected by the 1993 RIA.

As discussed in Section 4.1.2, EPA believes the difference in projected CAMU usage from the 1993 RIA and the actual usage seen in the *CAMU Site Background Document* to be

attributable to four factors. The "litigation cloud" effect is just one of these four factors. Therefore, EPA does not anticipate that the potential resolution of this litigation uncertainty through the rule will result in the significant CAMU usage estimated in the 1993 RIA. Furthermore, the increased CAMU usage estimated in the bounding analysis above is not intended to serve as an update to the 1993 RIA projections. Rather, due to the complexity involved in estimating CAMU usage in the post-regulatory case for the rule, EPA makes the above estimates for illustrative purposes only; they do not represent a definitive statement of the expected savings from the rule.

Limitations of the Analysis of Changes in CAMU Use

The analysis above provides order-of-magnitude estimates of the potential incremental changes in CAMU usage that EPA anticipates will result from the Amendments. This analysis is subject to a number of major uncertainties.

In this analysis, EPA projects changes in CAMU usage by using professional judgment based on the CAMU usage figure calculated for the baseline. These figures are very uncertain and should be considered illustrative in nature. The influences that EPA analyzes are limited to those known to exist as a result of the rule. The interactions between these influencing factors are not fully understood. Therefore, the resulting estimates in changes in CAMU usage are very uncertain. Finally, the estimates of cost impacts rely on two representative cases, "leaving waste in place" and "full remediation without a CAMU." These two cases provide a framework for assessing costs and cost savings. However, the figures that EPA uses to estimate impacts, which are taken from the 1993 CAMU RIA, are based largely on a full remediation scenario that includes significant incineration of wastes. Such a scenario is highly unlikely.

Several commenters stated that the "onerous" approval process and the "excessively stringent" treatment standards established in the Amendments would result in decreased use of CAMUs. In fact, a few commenters believed that the Amendments would result in facilities choosing to cap-in-place rather than selecting more environmentally protective options. EPA's analysis of the approval process and treatment requirements suggests that these provisions will result in moderate cost increases over the existing rule to facilities employing a CAMU. However, EPA's analysis does not suggest that the Final Amendments will result in significant changes to CAMU usage, but rather would allow almost all the CAMUs approved under the existing CAMU rule to be approved without changes under the CAMU Amendments. Furthermore, EPA believes that the cost increases anticipated under the Final Amendments are reflective of the balance sought by the Agency in providing a clearer national minimum standard for CAMUs while maintaining the CAMU rule's incentives for environmental protective remediation. Additionally, one of the Agency's chief motives in entering into the settlement agreement was the resolution of the CAMU legal challenge which had deterred the use of CAMUs in cleanup decisions. As discussed above, the Agency is unclear as to the long-term result of the Amendments in effecting CAMU usage.

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Chapter 5: Total Impacts

This Chapter assesses the total impacts of the Amendments to the CAMU rule. It draws from Chapter 2 on the incremental costs of CAMU approval, Chapter 3 on the impacts of the treatment and unit design standards and the treatment and/or storage only provisions, and Chapter 4 on the incremental change in CAMU use. In addition, it includes a brief qualitative discussion of the impacts from allowing CAMU-eligible wastes to be disposed in off-site hazardous waste landfills. The total impacts for the rule and the context of these impacts are presented in the following sections:

5.1 Total Impacts of the CAMU Amendments

5.2 Estimated Impacts from Changes in CAMU Use

What are the Main Findings of this Chapter?

- *The total impacts for the rule are estimated to range from $217,000 per year to $452,000 per year (see Exhibit 5-1).*

- *A potential change in CAMU use resulting from the rule could have impacts ranging from a savings of $4.3 million per year to a cost of $5.0 million per year (see Exhibit 5-2). These order-of-magnitude bounding analysis estimates are for illustrative purposes only and should not be reported as the total impacts estimated for the rule.*

5.1 Total Impacts of the CAMU Amendments

EPA estimates the total impacts of the Amendments by adding the incremental costs of CAMU approval and the incremental impacts of the treatment and unit design standards. The Final Amendments include a provision which allows for alternatives to the TCLP to measure treatment effectiveness for metal bearing wastes. Additionally, the Amendments allow for physical treatment (such as blending, mixing, and sizing) to occur in staging piles. The Agency has added these two provisions since publication of the proposed rule. However, this analysis does not address any potential impacts which may result from these two changes, as they are believed to be minimal.

Impacts of the CAMU Approval Process

In Chapter 2, EPA estimates the incremental impacts associated with the changes to the CAMU approval process. The Amendments formalize the CAMU approval process and may increase the level of burden associated with approval. EPA obtained expert estimates regarding these incremental changes in approval costs.

These total incremental costs are estimated to be:

Low-End = 1,084 hours per year x $71.24 per hour labor rate = $77,224 per year

High-End = 2,620 hours per year x $92.52 per hour labor rate = $242,402 per year

This estimated annual incremental cost, ranging between approximately $77,000 and $242,000 per year, results primarily from four parts of the amended approval process:

- The information submittal requirements established to ensure that remediation wastes managed in a CAMU are "CAMU-eligible wastes,"
- The identification of principal hazardous constituents (PHCs) in the waste,
- The use of the adjustment factors (particularly adjustment factor E) regarding the treatment requirements, and
- The liner and cap standards.

This range represents the incremental impacts annually experienced as a result of the Amendments, assuming that six CAMUs are approved per year. If that rate of CAMU approvals changed in a given year, the annual impacts for that year would change accordingly. Dividing by six (the number of CAMUs approved per year in the baseline) renders an estimate of the incremental impact per CAMU; this estimate ranges between approximately $12,900 and $40,400 per CAMU.

Impacts from the Treatment and Unit Design Standards for Permanent CAMUs and from the Treatment and/or Storage Only CAMU Provisions

EPA estimates the incremental impacts associated with the amended treatment and unit design standards by comparing baseline practices to the requirements in the final rule. For the existing CAMUs for which the treatment and unit design used under the 1993 regulations appeared inconsistent with the Amendments, EPA estimates the total incremental costs required to make the CAMU consistent with the Amendments. EPA performs this work separately for permanent CAMUs and for treatment and/or storage only CAMUs. EPA totals the estimates from each CAMU and considers this sum in calculating the total impacts attributable to the amended standards.

Three of the 39 existing permanent CAMUs were identified as being potentially inconsistent with the amended unit design requirements. Two of these CAMUs likely would require additional cap design features and one likely would require a liner. The total cost of bringing these three CAMUs into consistency with the Amendments is estimated to range between $1,088,000 and $1,649,000. The average incremental cost associated with the treatment and unit design requirements is estimated to range between approximately $28,000 and $42,000 per permanent CAMU when averaged across all 39 existing permanent CAMUs. Applying the

average incremental cost per permanent CAMU to the five permanent CAMUs expected to be approved per year in the future results in a cost of $140,000 to $210,000 per year.

EPA identified all of the treatment and/or storage only CAMUs approved under the existing rule as being consistent with the unit design requirements in the Amendments. Therefore, the total cost impacts associated with the treatment and unit design requirements for permanent CAMUs and for treatment and/or storage only CAMUs are estimated to range between $140,000 to $210,000 per year.

EPA believes that there may be minor costs not fully accounted for in this analysis in the actual implementation of the Amendments. For example, the Amendments may result in additional lab costs for testing PHCs or operating treatment technologies for a longer period of time to lower the levels reached for PHCs at a given site. Similarly, many of the CAMU remedies in the baseline include treatment of hot spots off-site; this practice may be used at additional facilities in cases where small volumes of waste are designated as PHCs. However, overall, EPA believes that the major incremental costs associated with these requirements are captured in the above analysis.

Qualitative Discussion of Impacts from Allowing CAMU-Eligible Wastes to be Disposed at Off-Site Hazardous Waste Landfills

EPA qualitatively examined the potential impacts of allowing CAMU-eligible wastes to be disposed of at off-site hazardous waste landfills, under certain conditions, without meeting the land disposal restrictions.[1] Despite the existence of various alternatives to full Subtitle C management of cleanup wastes under the baseline requirements (e.g., treatability variances), facilities are still likely in certain cases to reduce the scope of their remedial efforts (or not conduct cleanup at all) because of Subtitle C requirements. Under the baseline conditions, facilities that send hazardous remediation waste off-site for disposal would typically incur significant costs to meet the requirements of the land disposal restrictions. Under the Final Amendments, however, these facilities have the option of treating CAMU-eligible waste to the national minimum treatment standards (or applying adjusted factors) and sending the waste off-site for disposal in a hazardous waste landfill. Under certain conditions, this provision is expected to provide facilities with enough of an incentive to clean up that they will increase their remedial efforts over what they would have pursued under baseline conditions. For these facilities, increasing the amount of cleanup may actually increase costs. These costs, however, would be borne voluntarily and therefore reflect (in the facility owner's view) an overall gain for the facility.

[1] The off-site disposal provision was proposed separately from the August 2000 CAMU Amendments, in a supplemental proposal on November 20, 2001 (66 FR 58085). This supplemental proposal received overwhelmingly favorable comments and is included in the CAMU Amendments Final Rule. For more details see the preamble to the final rule.

Thus, EPA believes that the off-site provision in the Final Amendments will result in an overall reduction of costs to facilities through a reduction in treatment requirements when cleanup waste is sent off-site for disposal in hazardous waste landfills.

Total Annual Incremental Impacts

Exhibit 5-1 presents the estimated total impacts of the rule on an annual basis. EPA estimates the impacts as the sum of the incremental approval costs and the incremental treatment and unit design costs.

Exhibit 5-1: Total Annual Impacts (Assuming 6 CAMUs Approved per Year) (in thousands of dollars)

Impacts	2001	2002	2003	2004	2005	2006
1. CAMU Approval Process Impacts	No Costs	$77 - $242	$77 - $242	$77 - $242	$77 - $242	$77 - $242
2. Treatment and Unit Design Requirements	No Costs	$140 - $210	$140 - $210	$140 - $210	$140 - $210	$140 - $210
TOTAL IMPACTS	No Costs	$217 - $452	$217 - $452	$217 - $452	$217 - $452	$217 - $452

The analysis estimates the impacts from the grandfathering window to five years following the effective date of the rule (2001 to 2006). As discussed above, the impacts for the treatment and unit design standards are the costs associated with three of 39 existing CAMUs that may need to meet additional unit design criteria to comply with the Amendments. EPA determines the total impacts to range from $217,000 per year to $452,000 per year. The limitations associated with these estimates are discussed in Chapters 2 and 3.

5.2 Estimated Impacts from Changes in CAMU Use

In Chapter 4, EPA assesses the potential change in CAMU use as a result of the rule. This change is estimated by examining the main influences tending to increase and/or decrease CAMU use across three different time periods associated with the rule. These time periods and the associated impacts are as follows:

Grandfathering Window

- Began with publication of the proposed grandfathering provision and ends with the effective date of the final Amendments, approximately 1-1/2 years in length, from August 2000 through December 2001.
- EPA found no significant evidence of an increase in CAMU use in this period compared to annual CAMU use under the 1993 rule.

Early After Promulgation

- Begins on the effective date of the rule and ends one year after the effective date and generally represents an adjustment period for implementation of the rule.
- EPA believes that the factors influencing potential changes in CAMU use are too uncertain to project the change in the number of CAMUs approved per year.

Post-Promulgation Equilibrium

- Begins one year after the effective date of the rule and ends approximately five years after the effective date of the rule, during which time the Agency believes there will be approximate equilibrium with respect to the influences from the rule on CAMU use. The five-year duration represents a reasonable time period for which the Agency intends to project impacts from the rule.
- EPA projected a potential increase or a potential decrease of five CAMUs per year. This range reflects the uncertainty regarding the relative importance of the various factors affecting changes in CAMU use. This incremental change results in cost impacts varying from a savings of $4.5 million per year to a cost of $4.5 million per year.[2]

For illustrative purposes only, EPA estimates the total annual impacts of the rule, combining the bounding analysis estimates with the estimates developed for the approval process changes and the treatment and unit design requirements. The Agency develops an upper bound estimate by adding the high-end cost associated with a potential change in CAMU usage, $4.5 million per year, to the high-end of the total costs for the approval process ($242,000 per year) and treatment and unit design requirements ($210,000 per year). This summation yields an upper bound cost of approximately $5.0 million per year. EPA develops a lower bound estimate of savings by adding the low-end impact associated with a potential change in CAMU usage, $4.5 million per year in savings, to the low-end of the total positive costs for the approval process ($77,000 per year) and treatment and unit design requirements ($140,000 per year). This summation yields a savings of approximately $4.3 million. Therefore, the bounding analysis provides a range from approximately $4.3 million in savings per year to $5.0 million in costs per year. (See Exhibit 5-2.) The likely limitations associated with these estimates are discussed in Chapter 4.

[2] See Section 4.2 of this *Economic Analysis* for a complete discussion of these cost impacts.

Exhibit 5-2: Potential Change in the Number of CAMUs Employed Per Year: A Bounding Analysis (in thousands of dollars)

Bounding Analysis Estimates	Impact Estimates for Each Year Within the Scope of Analysis					
	2001	2002	2003	2004	2005	2006
Impacts from CAMU Usage Changes (*Illustrative in Nature*)	No change estimated	Too uncertain to estimate	$4,300 savings to $5,000 cost	$4,300 savings to $5,000 cost	$4,300 savings to $5,000 cost	$4,300 savings to $5,000 cost

The question may be raised as to how this cost savings for increased CAMU usage in the bounding analysis compares with the $1 to $2 billion annual savings in the 1993 CAMU Regulatory Impact Analysis (RIA). The 1993 RIA baseline represented facilities performing remediation under the corrective action requirements, generally excavating wastes and treating them in compliance with the land disposal restrictions (LDRs) via combustion technologies. Given the resulting high costs for such baseline remedial approaches, EPA presumed that the relief provided by the original CAMU regulation was widely applied in the post-regulatory case. Therefore, EPA estimated significant CAMU usage. The baseline for the CAMU Amendments was described by the historical data EPA obtained on those facilities that have approved CAMUs since the 1993 rule. EPA drew the baseline for the analysis of the Amendments from the historical data on facilities that have approved CAMUs (or are near approval) over the past eight years (see the *CAMU Site Background Document* in the docket for this rulemaking). EPA projections of the potential change in CAMU use resulting from the Amendments are based roughly on these baseline CAMU use figures. Therefore, the increase in CAMU use projected in the post-regulatory case in the bounding analysis for the rule is relatively low.

EPA believes the difference in projected CAMU usage from the 1993 RIA and the actual usage seen in the *CAMU Site Background Document* to be attributable to four factors. The "litigation cloud" effect is just one of these four factors. Therefore, EPA does not anticipate that the potential resolution of this litigation uncertainty through the rule will result in the significant CAMU usage estimated in the 1993 RIA. Furthermore, the increased CAMU usage estimated in the above bounding analysis is not intended to serve as an update to the 1993 RIA projections. Rather, due to the complexity involved in estimating CAMU usage in the post-regulatory case for the rule, EPA makes the above estimates for illustrative purposes only; they do not represent a definitive statement of the expected savings from the rule.

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Chapter 6: Administrative Requirements

This Chapter discusses the administrative and regulatory requirements that must be addressed in support of a final notice of rulemaking. The Chapter has the following sections:

6.1 Regulatory Flexibility Act (RFA) as Amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA)

6.2 Paperwork Reduction Act

6.3 Unfunded Mandates Reform Act

6.4 National Technology Transfer and Advancement Act

6.5 Consultation and Coordination with Indian Tribal Governments (Executive Order 13175)

6.6 Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)

6.7 Federalism (Executive Order 13132)

6.8 Environmental Justice (Executive Order 12898)

6.9 Congressional Review Act

6.10 Energy Effects (Executive Order 13211)

Executive Order 12866 on Planning and Regulatory Review is addressed in the earlier Chapters of this *Economic Analysis*. The previous Chapters of this document provide important background for understanding the analyses presented in this Chapter.

What are the Main Findings from this Chapter?

EPA performs two screening analyses for SBREFA to assess the potential small entity impacts from the rule. EPA uses data on existing CAMUs to assess potential impacts on small entities that may use CAMUs in the future. The results from these two screening analyses are shown below.

Screening Analysis of Impacts on Small Entities: Of the 47 facilities currently using CAMUs, EPA found data to determine the small entity status for all but seven facilities. Of the 40 facilities for which size was determined, only three are small entities. Using the Sales Test, the three small entities using CAMUs would have incurred impacts

ranging from 0.01 to 0.32 percent of net sales if they had applied for their CAMU after the provisions are amended.

Screening Analysis of Significant Impact for Facilities for Which the Size Status was Undetermined: For the seven facilities for which size status cannot be determined, EPA performed a significant impact screen. EPA found sufficient data for five of these facilities to determine impacts through use of the Sales Test. The impacts range from less than 0.01 to 0.07 percent. EPA does not include two facilities in this screen due to lack of available data; however, these facilities would be unlikely to incur significant impacts as a result of the rule.

Based on these screening analyses, EPA believes that the CAMU Amendments will not have a significant impact on a substantial number of small entities. The analyses conducted pursuant to the other administrative regulatory requirements are discussed in Sections 6.2 to 6.8.

6.1 Regulatory Flexibility Act (RFA) as Amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA)

In this section, EPA assesses the potential impacts on small entities resulting from the CAMU Amendments. For the proposed rule, EPA analyzed the potential impacts on small entities for the 39 CAMUs approved at that point in time. As discussed in Chapter 2, EPA has updated the number of existing CAMUs through reviews performed by the states and Regions. This analysis, therefore, updates the analysis performed for the proposed rule by assessing the potential for impacts to small entities for the nine newly identified CAMUs, and by making other minor adjustments to the CAMUs identified in the proposed rule analysis. EPA received no comments on this analysis, and there is no change to the conclusion reached in the proposed rule analysis that this action will not have a significant economic impact on a substantial number of small entities.

The following two sections address the methodology EPA uses to assess small entity impacts and the estimated small entity impacts. They describe the two screening analyses performed by the Agency and present the results for each.

6.1.1 Methodology to Assess Small Entity Impacts

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

For purposes of assessing the impacts of the CAMU Amendments on small entities, a small entity is defined as: (1) a small business that meets the RFA default definitions for small business (based on SBA size standards found at www.sbaonline.sba.gov/size); (2) a small governmental jurisdiction that is a government of a city, county, town, school district, or special

district with a population of less than 50,000; and (3) a small organization that is a not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

This analysis employs data on the owner/operators of the existing CAMUs identified in the *CAMU Site Background Document* to assess the potential on small entity impacts resulting from the Amendments. The Agency performs two screening analyses to assess the potential for a significant impact on a substantial number of small entities and thus the need for development of a Small Business Advocacy Review Panel. First, the Agency determines whether any small entities are likely to be significantly affected by the incremental impacts resulting from the amended rule. Second, for those CAMU facility owner/operators for which the size status cannot be determined, the Agency performs a significant impact screen using the Sales Test (i.e., the ratio of incremental costs to net sales for a firm). The results from each screening analysis do not vary substantively from the analyses presented in the proposed rule.

All of the owner/operators of existing CAMUs are businesses. None of them are small non-profit organizations or small governmental jurisdictions and, therefore, these types of entities are not anticipated to incur any impacts from the rule. This analysis, therefore, focuses only on small businesses as small entities. If it is found that there are small entities affected, that they are significantly economically affected, and that a substantial number of small entities are so affected, a full regulatory flexibility analysis must be prepared.

Framework for the Analysis

The Agency faced two important questions in developing the framework for analyzing small entity impacts. The first was how to define the universe of facilities affected by the amended rule. The second was how to assess the incremental changes in CAMUs under the baseline and post-regulatory scenarios.

The universe of facilities that potentially could employ a CAMU in remediation and thus could be affected by the amended rule includes facilities performing cleanups under RCRA corrective action, Superfund, and state cleanup authorities. Over 6,000 facilities, excluding Superfund sites, can be potentially reached through RCRA corrective action authority. To attempt to determine the portion of these facilities that will require cleanup at some point in the future and would employ a CAMU or would have used a CAMU but for the Amendments would require significant effort and yield highly uncertain results. Thus, EPA considered using the analysis in the 1993 CAMU Regulatory Impact Analysis (RIA). However, as described earlier in this *Economic Analysis*, EPA believes that its projections of future CAMU use are unrealistically high. In addition, the 1993 RIA did not analyze small entity impacts, in part because the rule reduced rather than increased costs.

For these reasons, EPA assumes that the owner/operators of these 47 CAMUs were reasonably representative of owner/operators of expected future CAMUs. This assumption rests on the completeness of the data in the *CAMU Site Background Document*. This document contains information from all the CAMUs approved to date (or, for a few sites, nearly approved), and therefore provides a sound basis for understanding how the CAMU rule has been

implemented. For purposes of this analysis, the Agency assumes there would be no new regulations or policy initiatives that affect CAMU usage in the future.

These historical data also help identify the differences in CAMUs approved under the existing rule (baseline case) as compared to CAMUs to be approved under the amended provisions (post-regulatory case). As discussed in more detail in Chapter 3, the Agency uses the information on the 47 existing CAMU remedies to assess consistency with the amended rule, and thus estimate the impacts of these Amendments. This assessment involves a facility-by-facility comparison of the CAMU remedy under the existing rule (baseline case) with the treatment and unit design requirements in the Amendments (post-regulatory case). In such an approach, the Agency again assumes that these historical data are reasonably representative of future CAMU remedies.

Therefore, the analysis of the small entity impacts anticipated to result from the amended rule rests on an assessment of facilities with existing CAMUs, not on an analysis of facilities that will actually use CAMUs in the future or on an analysis of the type of CAMUs likely to be used in the future. As stated earlier, the Agency believes that this rule will not significantly affect the nature of CAMUs or the types of facilities employing CAMUs. Thus, the Agency believes the analysis of future small entity impacts based on historical CAMU usage is reasonable.

Screening Analysis of Impacts on Small Entities

In this section, EPA examines the small entity status of facilities employing CAMUs under the existing rule. This section discusses (1) EPA's determination of small entity status for facilities using CAMUs and (2) EPA's assessment of the impacts on these small entities.

Step 1: Determine Small Entity Status of Facilities Using CAMUs: EPA collected data on the employee size and net sales for the parent company of the 47 facilities employing CAMUs in the baseline. Using these data, EPA determined, according to the SBA size standards, whether any of the facilities were small entities.

This analysis follows EPA's *Revised Interim Guidance for EPA Rulewriters* (March 29, 1999), which indicates that the SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.

One minor change in this analysis from the analysis for the proposed rule is the updating of industry codes. On October 1, 2000, the new SBA size standards for small businesses based on the North American Industry Classification System (NAICS) took effect (65 FR 30836, May 15, 2000). NAICS codes replaced the previous size standards established under the Standard Industrial Classification (SIC) system. EPA identified primary NAICS codes of the parent company (and all its subsidiaries) for all CAMUs newly identified since the proposed rule and to the extent possible for previously identified CAMUs that are affiliated with major corporations. The Agency relied on older SIC codes and SBA's year 2000 size classifications where NAICS codes were unavailable. The conversion to the new classification system had no substantive impact on the conclusions of the Agency's small entity impact analysis.

EPA obtained the information necessary to assess the size of the companies with facilities employing CAMUs from the following sources:

- Industrial codes of the parent company were obtained through Ward's Business Directory of U.S. Private and Public Companies, 2001, supplemented by the Envirofacts website (www.epa.gov/enviro/html/multisystem_query_java.html).

- SBA size standards are codified at 13 CFR 121.201 and were obtained from the SBA website (www.sba.gov/library/lawroom.html). The SBA size standards, which are reissued annually, were delineated previously by SIC code and now by NAICS code. All four-digit industry codes found in this report refer to SIC codes and all six-digit codes refer to NAICS codes. For one company, only the general three-digit NAICS code primary industry category was available. However, the size standard is uniform for all industries that compose that three-digit code.

- Employee size and net sales figures for the facilities were obtained through various websites, chiefly Dun & Bradstreet data and the Securities & Exchange Commission's EDGAR Database of Corporate Information (www.sec.gov/edgarhp.htm) and Hoovers (www.hoovers.com). EPA obtained figures for the most current years available.

- Data also were obtained or verified from the Right-to-Know Network site (www.rtk.net).

Small entity information obtained for the corporate parent owners of the 47 facilities using CAMUs under the existing rule revealed the following:

- 37 facilities are not small entities;

- 3 are designated as small entities (General Timber in Sanford, NC, Saxon Metals Company in Whiting, IN, and Synalloy Corporation in Spartanburg, SC), of which one (General Timber) is the owner of a treatment and/or storage only CAMU; and

- 7 facilities have an unknown small entity status because the relevant data regarding number of employees and annual net sales were not available.

The 37 facilities determined not to be small entities are not used further in the small entity impact analysis. The impacts for the seven facilities with an unknown small entity status are addressed separately in the second screening analysis discussed later. The impacts on the three facilities determined to be small entities are discussed in Step 2, below.

Step 2: Assess Impacts on Facilities Identified as Small Entities: EPA uses annual net sales data and the annualized incremental compliance costs calculated in Chapters

2 and 3 for each individual firm to determine the significance of the impacts on small entities through the "Sales Test."

General Timber is a wood treating site that uses a treatment and/or storage only CAMU to biotreat contaminated soils. The only costs attributable to the facility as a result of this rule are those incremental costs associated with the CAMU approval process. For treatment and/or storage only CAMUs, these costs are estimated to be approximately $2,400 to $4,600 ($230 to $440 annualized at seven percent over 20 years). Their significance, with respect to General Timber's annual net sales, is estimated using the Sales Test to be between 0.01 and 0.02 percent. EPA concludes that small businesses similar to this one are unlikely to be significantly affected by the Amendments.

Blackman Uhler Chemical Company, a subsidiary of Synalloy Corporation, has a permanent CAMU for disposal of wastewater treatment sludge and underlying contaminated soils that will be excavated from six former wastewater treatment lagoons that have been designated Solid Waste Management Units. The annualized incremental approval costs from the amended rule are estimated as $1,400 to $4,500. In addition, Blackman Uhler may potentially be required to add a liner to comply with the amended treatment and unit design standards, as discussed in Chapter 3, at an annualized cost of $61,000 to $114,000. The total incremental compliance costs, therefore are expected to be $62,400 to $119,500. Their significance, with respect to the annual net sales of the corporate parent, Synalloy Corporation, is estimated to be between 0.05 and 0.10 percent. Given this Sales Test ratio, EPA concludes that small businesses similar to this one are unlikely to be significantly affected by the Amendments.

Saxon Metals Company (formerly Federated Metals) has a permanent CAMU to dispose of untreated remediation waste and thereby help to eliminate significant exposures that pose threats to human health and the environment, to clean up contaminated soils to levels consistent with current land use, and to restore groundwater to its maximum beneficial use and eliminate risks to human health by meeting the applicable health-based groundwater protection standards. The annualized incremental approval costs from the Amendments are estimated as $1,400 to $4,500. Their significance, with respect to Saxon Metals' annual net sales, is estimated using the Sales Test to be between 0.10 and 0.32 percent. Given this Sales Test ratio, EPA concludes that small businesses similar to this one are unlikely to be significantly affected by the rule.

To the extent that the 40 facilities for which small business status could be determined are representative of future CAMU users, EPA expects that no small entities will be significantly affected economically by the Amendments.

Exhibit 6-1 displays the small entity information obtained for the corporate parent owners of the 47 facilities employing CAMUs under the existing rule.

Exhibit 6-1: SBREFA Information for Analysis of the CAMU Amendments
(This exhibit includes small entity data on the 47 facilities employing CAMUs under the existing rule.
SBA identifies small entity cutoffs either in terms of number of employees or net sales.)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
EPA REGION 1										
Dow Chemical, Allyn's Point Plant Gales Ferry, Connecticut CTD001159730	Permanent	325188	Dow Chemical Company	41,943	750	$23,008	Not applicable	No	Not applicable	Not applicable
Hamilton Standards Windsor Locks, Connecticut CTD001145341	Permanent	333921	United Technologies Corp.	153,800	500	$26,206	Not applicable	No	Not applicable	Not applicable
Newtown Refining Corp. (formerly PSC Resources) Palmer, Massachusetts MAD980672208 (Superfund Site)	Permanent	324110	No parent company identified	No data available	1,500	No data available	Not applicable	Undeter-mined	See Exhibit 6-2	No
Remington Arms Co., Inc. (formerly Sporting Goods Properties, Inc. and Lake Success Business Park) Bridgeport, Connecticut CTD001453216	Treatment/ Storage Only	332994	Clayton, Dubilier & Rice (Private equity investments)	No data available	Not applicable	$21,000+	Not applicable	No	Not applicable	Not applicable
EPA REGION 2										
American Home Products (a.k.a. American Cyanamid), Bound Brook Site Bridgewater, New Jersey NJD002173276 (Superfund Site)	Permanent	325412	American Home Products Corp.	48,036	750	$13,263	Not applicable	No	Not applicable	Not applicable

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
Ciba-Geigy, Main Plant Glen Falls, New York NYD002069748	Permanent	2816	Novartis AG	68,000	1,000	$40,789	Not applicable	No	Not applicable	Not applicable
Laidlaw Environmental Services (formerly Rollins Environmental Services) (a.k.a.: Safety-Kleen) Bridgeport, New Jersey NJD053288239	Permanent	4953	Laidlaw Inc.	94,900	Not applicable	$2,926	$6.0 million	No	Not applicable	Not applicable
Proteco and Servicios Carbareon, Inc. (formerly Proteccion Technica Ecologica) Penuelas, Puerto Rico PRD091018622	Permanent	4953	No parent company identified	No data available	Not applicable	No data available	$6.0 million	Undeter-mined	See Exhibit 6-2	No
Roth Bros. Smelting Corp. East Syracuse, New York NYD006977086	Permanent	331492	Private	10,000+	750	$6,000	Not applicable	No	Not applicable	Not applicable
EPA REGION 3										
Cytec Industries, Inc. (formerly American Cyanamid) Willow Island, West Virginia WV0001905942	Permanent	2819	No parent company identified	4,800	1,000	$1,492.5	Not applicable	No	Not applicable	Not applicable
East Pennsylvania Manufacturing Lyon Station, Pennsylvania PAD002330165	Permanent	335911	Private	3,200	500	$458 (estimate Wards Business Directory)	Not applicable	No	Not applicable	Not applicable

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
EPA REGION 4										
Air Products and Chemicals, Inc. Pace, Florida FLD008155673 (Superfund Site)	Permanent	325120	No parent company identified	17,500	1,000	$5,467	Not applicable	No	Not applicable	Not applicable
ATOFINA (formerly Elf ATOCHEM NA Inc.) Calvert City, Kentucky KYD006370159	Permanent	422720	TOTAL FINA ELF (formerly Elf Atchem)	123,300	100	$107,890	Not applicable	No	Not applicable	Not applicable
Blackman Uhler Chemical Company Spartanburg, South Carolina SCD003349065	Permanent	331111	Synalloy Corporation	510	1,000	$114	Not applicable	Yes	0.05 - 0.10	No
Cavenham Forest Industries Mobile, Alabama ALD057226904	Treatment/ Storage Only	321114	No parent company identified	650	500	No data available	Not applicable	No	Not applicable	Not applicable
Cavenham Forest Industries Gulfport, Mississippi MSD057226961	Treatment/ Storage Only	321114	No parent company identified	650	500	No data available	Not applicable	No	Not applicable	Not applicable
Cedartown Industries Cedartown, Georgia GAD095840674 (Superfund Site)	Permanent	3341	No parent company identified	No data available	500	No data available	Not applicable	Undeter-mined	See Exhibit 6-2	No
General Timber Inc. Sanford, North Carolina NCD057034449	Treatment/ Storage Only	321114	No parent company identified	26	500	$2.4	Not applicable	Yes	0.01 - 0.02	No
Koppers Industries, Inc. Guthrie, Kentucky KYD006383392	Permanent	321114	No parent company identified	725 salaried; 1,430 hourly	500	$724	Not applicable	No	Not applicable	Not applicable

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
Morton International MPD (formerly Morton Chemical) Moss Point, Mississippi MSD008186587	Permanent	325211	Rohm & Haas Co.	18,474	1,000	$6,879	Not applicable	No	Not applicable	Not applicable
Southern Wood Piedmont August, Georgia GAD051034387 (Superfund Site)	Permanent	321114	No parent company identified	2,300	500	$1,000	Not applicable	No	Not applicable	Not applicable
Vicksburg Chemical Co. Vicksburg, Mississippi MSD990714081	Permanent	2812	No parent company identified	1,500	1,000	$424	Not applicable	No	Not applicable	Not applicable
William L. Bonnell Co., Inc. Newnan, Georgia GAD003273224	Permanent	21111	Tredegar Corporation	3,500	500	$869.3	Not applicable	No	Not applicable	Not applicable
EPA REGION 5										
Beazer East Inc. Carbondale, Illinois ILD000819946	Permanent	321114	No parent company identified	725 salaried; 1,430 hourly	500	$724	Not applicable	No	Not applicable	Not applicable
BP Chemicals, Inc. Lima, Ohio OHD042157644	Permanent	2819	BP p.l.c.	107,200	1,000	$148,062	Not applicable	No	Not applicable	Not applicable
Ford Motor Co. Monroe Stamping Plant Monroe, Michigan MID005057005	Permanent	336111	No parent company identified	345,991	1,000	$176,064	Not applicable	No	Not applicable	Not applicable
Inland Steel East Chicago, Indiana IND005159199	Treatment/ Storage Only	331111	Ispat International N.V.	17,800	1,000	$5,097	Not applicable	No	Not applicable	Not applicable

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
RMI Titanium Extrusion Plant Ashtabula, Ohio OHD980683544	Treatment/ Storage Only	3351	No parent company identified	1,105	750	$319	Not applicable	No	Not applicable	Not applicable
Saxon Metals Company (formerly Federated Metals) Whiting, Indiana IND005444104	Permanent	331492	No parent company identified	12	750	$1.4	Not applicable	Yes	0.10 - 0.32	No
USS Lead Refinery, Inc. East Chicago, Indiana IND047030226 (Superfund Site)	Permanent	3341	USX Corporation	32,103 (1999)	500	$29,534 (1999)	Not applicable	No	Not applicable	Not applicable
U.S. Steel Gary Works Gary, Indiana IND005444062	Permanent	3341	USX Corporation	32,103	500	$29,534	Not applicable	No	Not applicable	Not applicable
EPA REGION 6										
Chevron USA, Inc. Port Arthur, Texas TXD008090409	Permanent	324110	Chevron Corporation	34,610	1,500	$46,532	Not applicable	No	Not applicable	Not applicable
GATX Corp. Galena Park, Texas TXD026481523	Permanent	532411	No parent company identified	5,500	Not applicable	$1,311.8	$5.0	No	Not applicable	Not applicable
Sandia National Laboratories, U.S. Dept. of Energy Albuquerque, New Mexico NM5890110518 (Superfund Site)	Permanent	541710	No parent company identified	7,600	Federal facility	Not applicable	Federal facility	No	Not applicable	Not applicable

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
Texas Eastman (formerly Eastman Chemical Co., Texas Eastman Division) Longview, Texas TXD007330202	Permanent	325188	Eastman Chemical Company	14,600	1,000	$5,292	Not applicable	No	Not applicable	Not applicable
WJ Smith Wood Preserving Co. Denison, Texas TXD066368879	Permanent	421690	Katy Industries	3,509	100	$553.2	Not applicable	No	Not applicable	Not applicable
Zinc Corporation of America (ZCA) Bartlesville, Oklahoma OKD000829440	Permanent	3341	Private	564	500	$24,900	Not applicable	No	Not applicable	Not applicable
EPA REGION 7										
Cherokee Co. Site Cherokee County, Kansas KS0001912104 (Superfund Site)	Permanent	212231[1]	No parent company identified	No data available	500	No data available	Not applicable	Undetermined	See Exhibit 6-2	No
Iowa Army Ammunition Plant Middletown, Iowa IA7213820445 (Superfund Site)	Treatment/ Storage Only	928110	No parent company identified	N/A	Federal facility	Not applicable	Federal facility	No	Not applicable	Not applicable
Jasper Co. Site (a.k.a., Oronogo-Duenweg Mining Belt Site) Joplin, Missouri MOD980686281 (Superfund Site)	Permanent	212231[1]	No parent company identified	No data available	500	No data available	Not applicable	Undetermined	See Exhibit 6-2	No

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
EPA REGION 8										
ASARCO, Inc. East Helena, Montana MTD006230346	Permanent	212[2]	Nueva Grupo Mexico	30,407	500	$3,591	Not applicable	No	Not applicable	Not applicable
Burlington Northern Santa Fe Railway (formerly BN Paradise Tie Plant) Paradise, Montana MTD000716787	Permanent	482111	No parent company identified	39,700	500	$9,209	Not applicable	No	Not applicable	Not applicable
Cenex Harvest States Co-Op Laurel Refinery (a.k.a. Cenex Harvest States Cooperatives) Laurel, Montana MTD006238083	Permanent	324110	No parent company identified	5,308	1,500	$8,571	Not applicable	No	Not applicable	Not applicable
Flying J, Inc. Williston, North Dakota NDT390010049	Treatment/ Storage Only	422720	No parent company identified	10,000	100	$2,089	Not applicable	No	Not applicable	Not applicable
Rocky Mountain Arsenal Commerce City, Colorado CO8210820769	Permanent	324110	No parent company identified	N/A	Federal facility	N/A	Federal facility	No	Not applicable	Not applicable
Union Pacific-Laramie Tie Plant Site Cheyenne, Wyoming WYD003926862	Permanent	482111	Union Pacific Corp.	50,000	500	$11,878	Not applicable	No	Not applicable	Not applicable

Exhibit 6-1: SBREFA Information for Analysis of CAMU Amendments (continued)

CAMU	CAMU Status	Primary SIC (4-digit) or NAICS (6-digit) Code	Parent Company	Company Full-Time Employees	Small Entity Employee Cutoff for SIC/NAICS Code (if applicable)	Company Net Sales (in millions)	Small Entity Sales Cutoff for SIC/NAICS Code (if applicable)	Small Entity	Percentage Annual Incremental Costs to Annual Net Sales	Significant Impact
EPA REGION 9										
IT Vine Hill Complex (including IT Vine Hill Baker) Martinez, California CAD000094771	Permanent	2992	No parent company identified	No data available	Not applicable	No data available	$6.0 million	Undeter-mined	See Exhibit 6-2	No

Notes:

1 The NAICS codes for Cherokee Co. Site and for Jasper Co. Site, both in Region 7 were determined by EPA based on site information; they are both lead and zinc mining sites, and very likely fall in this SIC. The information used to classify these sites was from the Superfund ROD Abstracts, which can be found at www.epa.gov/superfund/sites/rodsites.

2 Only the general three-digit NAICS code primary industry category was available for ASARCO, Inc.

Significant Impact Screen on Facilities of Undetermined Size Status

For each of the seven facilities shown in Exhibit 6-1 for which size status cannot be determined, the number of employees was unavailable. Therefore, EPA focuses on receipts to determine possible effects on small entities. EPA conducts a significant impact screen using the data on the number of small firms and estimates receipts available on an SIC code basis. This screen compares the receipts for an average small entity within an industry code to the estimated annualized impact from the Amendments for the given facility in that industry code. Because the latest available industry Census data is from 1997, before the introduction of NAICS codes, this information is matched by SIC code. EPA uses the following process to estimate average impacts on small businesses in the CAMU company's industry.

- The receipts for an average small entity within an industry code were estimated by using "Employer Firms, Employment and Estimated Receipts by Employment Size of Firm, 1997" from the Office of Advocacy, Small Business Administration at www.sba.gov/ADVO/stats/us_rec97.pdf.

- For each facility currently employing a CAMU (but for which small entity status is undetermined), EPA used the data referenced in the above bullet to obtain the estimated receipts for the small entities in the facility's SIC code and the number of firms below the small entity cutoff for the SIC code. These data allow EPA to calculate the average estimated receipts per small firm in the facility's SIC code.

- EPA calculates the ratio between the total impacts resulting to the company from the CAMU Amendments and the average estimated receipts per firm in the facility's SIC code. Where the impact is estimated as a range, the upper bound of the range is used to calculate the Sales Test ratio.

Exhibit 6-2 shows this comparison for the seven facilities for which small entity status is undetermined. For the five facilities for which financial data exist, the Sales Test ratios range from less than 0.01 to 0.07 percent. Therefore, it is reasonable to conclude that there would be no significant impacts if these facilities are average small entities in their industries.

EPA did not find data to determine the Sales Test ratio for two sites. Therefore, the Agency is unable to verify that the average small entity operating in the industry in which both sites fall would not incur significant impacts resulting from the amended rule. However, the Cherokee County and the Jasper County Sites would have to have annual receipts below $2.5 million each ($25,500/1 percent) in order to reach a 1.00 percent Sales Test ratio. While such annual receipts are not out of the realm of possibility for an individual site, most mining sites are owned by larger corporations with numerous operations and large receipts in order to cushion economic swings in the commodity industry. This fact is evidenced, in part, by the small number of small businesses (18) in this SIC code.

Exhibit 6-2: Significant Impact Screen for Facilities for which Small Entity Status Could Not Be Determined (Facilities are Listed in Alphabetical Order)

CAMU	SIC Code	Estimated Receipts for Small Entities in SIC Code (# of Small Firms in SIC Code)	Average Estimated Receipts per Firm	Estimated Impacts Resulting from CAMU Amendments	Ratio of Impacts to Average Receipts per Firm
Cedartown Industries Cedartown, Georgia GAD095840674	3341	$3,571 million (222 firms)	$16 million	$1,400 - $4,500	0.03 percent
Cherokee Co. Site Cherokee County, Kansas KS0001912104	1031[1]	No Data Available (18 firms)	No data available	$22,400 - $25,500 [($1,400 - $4,500) + $21,000]	Unknown
IT Vine Hill Complex Martinez, California CAD000094771	2992	$5,842 million (347 firms)	$17 million	$1,400 - $4,500	0.03 percent
Jasper Co. Site (a.k.a. Orongo-Duenweg Mining Belt Site) Jasper Co., Missouri MOD980686281	1031[1]	No Data Available (18 firms)	No data available	$22,400 - $25,500 [($1,400 - $4,500) + $21,000]	Unknown
Proteccion Tecnica Ecologica (formerly Proteco & Servicios Carbareon, Inc.) Penuelas, Puerto Rico PRD091018622	4953	$12,943 million (2,348 firms)	$6 million	$1,400 - $4,500	0.07 percent
PSC Resources (formerly Newtown Refining Corp.) Palmer, Massachusetts MAD980672208	2911	$160,443 million (128 firms)	$1,253 million	$1,400 - $4,500	<0.01 percent
Remington Arms Company, Inc. (formerly Sporting Goods Properties, Inc. and Lake Success Business Park) Bridgeport, Connecticut CTD001453216	3484	$1,326 million (197 firms)	$7 million	$230 - $440	0.06 percent

Note:

1 The SIC codes for Cherokee Co. Site and for Jasper Co. Site, both in Region 7 were determined by EPA based on site information; they are both lead and zinc mining sites and very likely fall in this SIC. The information used to classify these sites was from the Superfund ROD Abstracts, which can be found at www.epa.gov/superfund/sites/rodsites.

6.1.2 Estimated Small Entity Impacts

EPA has performed two screening analyses to examine firms that used CAMUs under the existing rule to assess the potential for small entity impacts from the amended rule on small entities that use CAMUs in the future. These screening analyses shows the following results:

Screening Analysis of Impacts on Small Entities: Of the 47 facilities using CAMUs in the baseline, EPA is able to determine the small entity status of all but seven facilities. For these 40 facilities, only three are small entities. None of these small entities are expected to incur significant impacts as a result of the Amendments were they to apply for approval of their CAMU after the Amendments.

Screening Analysis of Impacts for Facilities of Undetermined Size Status: For the seven facilities for which size status could not be determined, EPA performs a significant impact screen. Based on this analysis, five of these seven facilities, for which average industry receipts for small businesses are available, are not expected to incur significant impacts as a result of the rule. Data were not available for the other two facilities; however, the Agency does not expect these facilities to incur significant impacts as a result of the amended rule.

Therefore, after considering the potential for economic impacts from the Amendments on small entities, EPA certifies that the CAMU Amendments will not have a significant economic impact on a substantial number of small entities.

Limitations of the Analyses

There are several limitations associated with the analyses presented above. First, the analyses are based throughout on historical CAMU usage at facilities that are not subject to the Amendments rather than on an assessment of facilities that will use CAMUs in the post-regulatory scenario and the type of CAMUs that will be used in the future. While this limitation is important, EPA believes that the assumption of representativeness between historical usage and future use is reasonable.

Second, there are uncertainties surrounding the estimation of the compliance costs related to the amended approval process and treatment and unit design standards. Assessment of these costs depends on a number of factors that are discussed earlier in this report. To the degree that these cost estimates are uncertain, the Sales Test ratios calculated for the small entity impacts assessment also are uncertain.

6.2 Paperwork Reduction Act

The information collection requirements in this final rule will be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1573.07) and a copy may be obtained from Sandy Farmer by mail at OP Regulatory

Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460, by email at farmer.sandy@epamail.epa.gov, or by calling (202) 260-2740. A copy may also be downloaded off the internet at http://www.epa.gov/icr. The requirements are not effective until OMB approves them.

The U.S. Environmental Protection Agency (EPA) is amending the regulations for CAMUs under RCRA. EPA originally established regulations applicable to CAMUs at 40 CFR Part 264, Subpart S (58 FR 8658, Feb. 16, 1993). EPA is amending these regulations to, among other things, more specifically define the eligibility of wastes to be managed in CAMUs, establish treatment requirements for wastes managed in CAMUs, and set technical standards for CAMUs. With regard to paperwork requirements, the rule adds language identifying specific types of information that facilities must submit in order to gain CAMU approval at § 264.552(d)(1)-(3) and requires that CAMU-authorizing documents require notification for ground water releases as necessary to protect human health and the environment at § 264.552(e)(5).

The general requirement for information submission, at § 264.552(d), requires the owner or operator to submit sufficient information to enable the Regional Administrator to designate a CAMU. EPA is modifying the existing information requirement under § 264.552(d) to include submission of the specific information listed under final § 264.552(d)(1)-(3)). The modifications are additions to the existing general requirement, and add three specific information submission requirements (unless not reasonably available) to directly address the final amendments pertaining to CAMU eligibility: (1) the origin of the waste and how it was subsequently managed (§ 264.552(d)(1)); (2) whether the waste was listed or identified as hazardous at the time of disposal and/or release to the environment (§ 264.552(d)(2)); and (3) whether the waste was subject to the land disposal requirements of Part 268 at the time of disposal and/or release to the environment (§ 264.552(d)(3)). Additionally, EPA is requiring certain facilities to notify EPA of releases to ground water. EPA will use this information to monitor releases and make determinations of when the releases might cause danger to human health or the environment. Facility owners or operators may use these data to keep track of releases and prevent them from reaching unacceptable levels.

EPA is amending the requirements for designating a CAMU under the authority of Sections 1006, 2002(a), CFR, 3005(c), 3007, 3008(h), and 7004 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984. In particular, under Sections 2002 and 3007 of RCRA, EPA is requiring the information collection amendments to the CAMU rule described above because they are needed for the Agency to effectively designate and track the operation of CAMUs.

In addition, the rule requires persons seeking approval to send CAMU-eligible wastes off-site (without meeting land disposal restriction requirements) to submit enough information to allow the Regional Administrator to provide that approval (see 40 CFR 264.555).

EPA estimates the total annual respondent burden and cost for the final new paperwork requirements to be approximately 1,354 hours and $123,958. The bottom line respondent burden over the three-year period covered by this ICR is 4,107 hours, at a total cost of approximately $371,874. The Agency burden or cost associated with this final rule is estimated to be approximately 189 hours and $7,860 per year. The bottom line Agency burden over the three-year period covered by this ICR is 567 hours, at a total cost of approximately $23,580.[1]

Section 3007(b) of RCRA and 40 CFR Part 2, Subpart B, which defines EPA's general policy on public disclosure of information, contain provisions for confidentiality. However, the Agency does not anticipate that businesses will assert a claim of confidentiality covering all or part of the information that will be requested pursuant to the final amended CAMU rule. If such a claim were asserted, EPA must treat the information in accordance with the regulations cited above. EPA also will make sure that this information collection complies with the Privacy Act of 1974 and OMB Circular 108.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless the collection displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

6.3 Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on state, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement including a cost-benefit analysis for proposed and final rules with "Federal mandates" that may result in expenditures of $100 million or more in any one year for state, local, and tribal governments considered together or to the private sector. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory

[1] Subsequent to conducting the Information Collection Request analysis, EPA updated the number of CAMUs used for "permanent" disposal and the number used for "storage and/or treatment" only. The ICR estimates that 31 of the 39 CAMUs in the CAMU Site Background Document were for permanent disposal; the correct number is 30 of 39. EPA will make the necessary recalculations to the ICR in the context of the final rule. EPA believes that the change in estimated burden as a result of such recalculations will be inconsequential.

alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for state, local, and tribal governments, in the aggregate, or the private sector in any one year. The Amendments establish approval process changes and treatment/unit design requirements that generally are already in use in the baseline. Therefore, the incremental impacts, as discussed in this analysis, are not estimated to be significant. Thus, the CAMU Amendments are not subject to the requirements of sections 202 and 205 of the UMRA.

Finally, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Under the amended rule, small governments will not implement the CAMU rule and are not generally expected to use CAMUs based on current patterns of CAMU usage seen in historical data. In addition, the CAMU rule makes no distinction between small governments and any potential regulated party.

6.4 National Technology Transfer and Advancement Act

As noted in the proposed rule, Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104-113, Section12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

The rulemaking involves technical standards (e.g., use of the TCLP test to assess compliance with treatment requirements). The Agency has not identified any potentially applicable voluntary consensus standards during its efforts to develop appropriate standards (e.g., during its discussions with Agency personnel and stakeholders who are experts in the areas addressed by this rulemaking). The Agency also did not receive comments identifying potentially applicable voluntary consensus standards.

6.5 Consultation and Coordination with Indian Tribal Governments (Executive Order 13175)

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 6, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." "Policies that have tribal implications" is defined in the Executive Order to include regulations that have "substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes."

The final Amendments to the CAMU rule does not have tribal implications because Indian tribal governments do not implement the CAMU rule. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this rule.

6.6 Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" (62 F.R. 19885, April 23, 1997), applies to any rule that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

The final Amendments to the CAMU rule is not subject to this Executive Order because it is not economically significant as defined in Executive Order 12866 and because the Agency does not have reason to believe that this rule presents disproportionate or additional risks to children. The Agency does not believe that the risks addressed by the Amendments – i.e., the risks from on-site management of hazardous cleanup wastes – present a disproportionate risk to children. The amended rule, among other requirements, sets minimum CAMU treatment and design standards designed to help ensure the protectiveness of CAMUs. EPA's analysis of these requirements shows that CAMUs already are meeting the minimum standards outlined in this rule. As amended by the final rule, the CAMU rule continues requiring that a decision concerning overall protectiveness of any specific CAMU be made by the Regional Administrator based on site-specific circumstances, including risks to children where appropriate. The Agency is committed to ensuring that these site-specific assessments include an assessment of risks to children where appropriate. Therefore, the Agency believes that these Amendments do not present disproportionate or additional risks to children at facilities employing a CAMU.

6.7 Federalism (Executive Order 13132)

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government."

This rule does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. First, any direct effects on the states will not be substantial because, as described more fully above, the Agency expects the increased analytical costs for oversight agencies (i.e., EPA or authorized states) associated with the rule to be insignificant. In addition, although the Amendments limit the discretion available to oversight agencies under the current CAMU rule, the Agency's record demonstrates that the CAMU decisions expected under the Amendments generally are the same as those reached under the current regulatory framework. In addition, EPA does not believe the amended rule has a substantial direct effect on states as regulated parties because, based on past patterns of CAMU usage, state governments are not generally expected to use CAMUs.

As for the EPA-state relationship and distribution of power and responsibilities, the final rule includes state authorization provisions that allow the large majority of states currently authorized for the CAMU provisions to become interim authorized for the Amendments at the same time Amendments become effective. Thus, for those states, there will be no period in which the Amendments are in effect federally, but not as a matter of state law. Even for those CAMU-authorized states that do not become interim authorized under this procedure, however, the Agency does not believe that any impact of the rule will be substantial. Although the Agency will implement the Amendments in such states until they become authorized, EPA does not expect that this generally will result in changes to the state's individual CAMU decisions under state law because, as described above, state CAMU decisions will likely be consistent with the Amendments. Thus, Executive Order 13132 does not apply to this rule.

The Agency notes, in addition, that prior to entering into the CAMU settlement agreement, EPA discussed with the states potential impacts on states from Amendments to the CAMU rule. During these discussions, individual states expressed concerns about potential disruption caused by the authorization process required in states that are already authorized for the 1993 CAMU rule, the reduced discretion that is available under any Amendments to the CAMU rule, and the potentially more elaborate process involved in making CAMU decisions.

EPA recognizes that these are valid concerns and believes the rule addresses them. For example, EPA includes a grandfathering provision to address the issue of disrupting existing CAMUs and those that are substantially in the approval process. The amended rule also includes

an approach to authorization that is intended to reduce disruption for states with authorized CAMU programs and to expedite authorization for states that have corrective action programs but are not yet authorized for CAMUs. In addition, EPA recognizes that increased process costs are introduced by this rule but, as is described in the background section of the preamble to the rule, EPA has tried to find a reasonable balance by adding sufficient detail to achieve the rule's goals while preserving site-specific flexibility that provides incentives to cleanup. Finally, the Amendments are designed to incorporate the CAMU designation process into the existing decision-making process that is typically used by states and EPA for cleanups including those used for making CAMU determinations. For example, EPA designed the principal hazardous constituent process and certain adjustment factors to reference the overall cleanup decision-making process within which the CAMU decision is made.

6.8 Environmental Justice (Executive Order 12898)

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations," and an accompanying memorandum to federal department and agency heads. The Order establishes a policy to help ensure that all communities, including minority communities and low-income communities, live in a safe and healthful environment. As noted in the presidential memorandum, it is designed to focus federal attention on the human health and environmental conditions in minority communities and low-income communities to realize the goal of achieving environmental justice. The Order also is intended to foster nondiscrimination in federal programs that substantially affect human health or the environment and to give minority communities and low-income communities greater opportunities for public participation in, and access to, public information on matters relating to human health and the environment. In general, to the greatest extent practicable and permitted by law, the Order directs federal agencies to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

The rule is intended to amend the existing CAMU rule through, among other requirements, establishing a formalized process for approval of CAMUs as well as setting national minimum treatment and unit design standards for CAMUs. The treatment and unit design standards formalize the existing expectations that site decisions be made within the overall decision making process in a manner protective of human health and the environment. The Agency's analysis shows that CAMUs are already meeting these minimum standards. Therefore, the Agency believes that these Amendments, although formalizing such requirements, do not appreciably affect the risks at facilities where CAMUs are employed. This rule does not address specifically the overall remedial decision making process within which CAMUs are approved. Thus, EPA believes that this rule will not have any disproportionately high and adverse human health or environmental effects on minority populations or low-income populations. The Agency continues its commitment to ensuring that environmental justice concerns are addressed within remedial decisions in corrective action.

6.9 Congressional Review Act

The Congressional Review Act, 5 U.S.C. §801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A Major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a "major rule" as defined by 5 U.S.C. §804(2). This rule will be effective 90 days following publication.

6.10 Energy Effects (Executive Order 13211)

This rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 Fed. Reg. 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, EPA has concluded that this rule is not likely to have any adverse energy effects.

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Appendix A: CAMU Expert Telephone Contact Information Form[1]

[1] This form was developed in preparation for EPA's analysis of the Proposed CAMU Amendments. Certain aspects of the form (e.g., adjustment factor citations) reflect out-of-date information with respect to the final form in the Final CAMU Amendments.

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Appendix A: CAMU Expert Telephone Contact Information Form

General Information

Expert (Region or State): _____ (Region/State ___)
Phone Number: _____
HQ Personnel: _____
_____

Date/Time of Call: (mo/day/yr) _____ (time)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended §264.552(d)

_____
_____
_____
_____
_____
_____
_____
_____

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

_____
_____
_____
_____
_____

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

8. Do you think CAMU usage will increase or decrease as a result of this rule?

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Appendix B: CAMU Expert Telephone Contact Responses

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CAMU Expert Telephone Contact Form - Expert #1

General Information

Expert (Region):	Ernie Waterman (Region 1)
Phone Number:	617-918-1369
HQ Personnel:	Paul Balserak
	Hugh Davis
Date/Time of Call:	March 15, 2000, 1:00 (Length of Call: 1 ½ hours)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended §264.552(d)

* Does this mean that you have to go through a big timetable exercise to figure out which land disposal restrictions were applicable at the time the waste was disposed?
* What is the burden of proof here? What happens when you can't find the paperwork on these issues?
* Essentially, for §264.552(d), (1) and 2), we already do this under the current regulations. (3) is the potential issue regarding additional costs. If this burden of proof is rigorous, but based on a reasonable standard, such as personal knowledge, etc. then not big deal.
* At a few sites, estimated 1 to 2 days extra work for the owner or operator and 1 to 2 days extra work for regional or state person.

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* We go through this thinking already, this won't add new burden over what we already do.
* This may add some in that it formalizes the process. Some facilities, for example., may wrangle more about officially calling something a "PHC" now, as opposed to being much less

formal and saying ... well, this needs to be treated, but this doesn't. Facilities may fear public reaction to things having the official name "PHCs" ... becomes stigma issue. May result in longer negotiations, trying to have fewer constituents and/or less volume be labeled PHCs. Although, for those facilities where this would occur, it may be that they'd already wrangle about things, so, the PHC issue may just replace whatever they would have wrangled about, not really add to the time or effort regarding negotiations.
* In the end, Ernie was uncertain whether it would add additional costs or not. It may at a few facilities. See what other experts say.

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Treatment standards overall not a big deal. The adjustment factors mirror pretty well the kinds of considerations that occur in CAMUs now.
* 90 percent may be an issue. This is not something that is currently considered ... tend currently to focus on risk based levels, Universal Treatment Standards, etc. not 90 percent. Again, though, doesn't think this will so much add new burden, as it will just become the issue that's debated at some sites rather than something else being subject to debate. The bottom line is, if you're using a CAMU, you're using it because it adds efficiency; this is the overarching goal of owners or operators using CAMUs.

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* For adjustment factor A, no new burden.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* For adjustment factor B, no new burden.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For adjustment factor C, no new burden.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, no new burden.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* The main issue here is that the engineering requirements add something new to rebut. In other words, the "immobile," "substantially met," "cost effective treatment" ... these will all need to be defined in the rule. Now you'll have to argue, with the public and/or owner or operator, not only that a CAMU option is better than non-CAMU options, but also why you aren't meeting the 'CAMU standards' why you are deviating from what EPA has designated as CAMU treatment requirements, etc.
* Overall, Ernie thinks that at half of the sites, additional time for consultants, regulator review, and presentation to the public, would be 1 man-week.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* See above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Liner standards would apply only for new units or lateral-expansion of an existing unit. These are in the minority. Even though Ernie not sure it makes sense all the time to put a liner in a lateral-expansion of an existing unit, he says they would do it currently.
* The regulators already go through this kind of general reasoning regarding standards under the existing rule implementation.
* No new costs added here!
* Cap standards - apply to all units. Conceptually, Ernie could imagine a case under current implementation where you'd want to put a cap on a permanent CAMU unit (temporary CAMUs under different standards) just to protect it from direct contact, but not to meet all the infiltration standards, etc. - which would not be allowed under the new rule. However, ultimately he does not see this adding costs.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* Ultimately, these standards add no/negligible new costs.
* Again, Ernie thinks that conceptually he could imagine a case where you would want to use a temporary CAMU for longer than 2 ½ years (I think that's it, whatever the staging pile standard is), but you wouldn't want to require a liner, as you'd have to in the p-reg. However, this not change his thinking that overall wouldn't be added costs.
* Remember that there are alternate standards you can argue for in some cases. For example, at one temporary CAMU, the contaminant at the site is lead (Pb). It could likely come under an immobility argument to get out of the liner requirement.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?
* Impossible to give an average time for approval of CAMU. CAMU is a tool within the whole scheme of remedial decision making. It may be that throughout the remedial decision making process a CAMU is discussed, worked on, etc. In this approach, you'd say it took years. However, the real work in actually approving the CAMU would more likely only take months.
* No real increase in approval time will result from this rule, though.

8. Do you think CAMU usage will increase or decrease as a result of this rule?
* There will likely be an adjustment period where people are trying to figure out the new rule and how it changes things for them. Grandfathering really helps here. But overall he sees CAMU remaining a popular option because it allows owners or operators to manage their problem on their site. No change in the rate of CAMU usage.

CAMU Expert Telephone Contact Form - Expert #2

General Information

Expert (Region):	Dave Vogler (Region 6)
Phone Number:	214-665-7428
HQ Personnel:	Paul Balserak
	Hugh Davis
Date/Time of Call:	March 21, 2000, 3:00 (Length of Call: 1 hour)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* Overall, do not think that this is a big deal. This information is reasonably available and is already submitted.
* Thinks that there would be "several hours per unit for owner or operator" and "a couple hours per unit" for region/state to review.
* Where there were public comments which required addressing, there could be more substantial time added; but there almost never are comments.

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* Could actually speed the process up. His experience is that the process is bogged down often by haggling over the process itself, and what will be the levels you meet, etc.
* He did not think that the label PHC would be a real stigma issue which would result in the facility fighting over calling things PHCs.

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Treatment standards overall not a big deal. The adjustment factors mirror pretty well the kinds of considerations that occur in CAMU now; in fact, thought that it might reduce burden a little in that the process would not be so open-ended.
* Very site specific regarding how these adjustment factors will work out....

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* For adjustment factor A, see above discussion.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* For adjustment factor B, see above discussion.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For adjustment factor C, see above discussion.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, see above discussion.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* For adjustment factor E(1), see above discussion.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* For adjustment factor E(2), see above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Liner - negligible costs at a few units for owner or operator and reviewer, but so very small that it's not worth quantifying.
* Cap - we do this anyway. No added costs.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* Same answer as with others - now that you have criteria and a process to go by, may make things easier.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* Might overall reduce approval time due to existence of a process.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* Hard to say; overall not much change in the use of CAMUs.
* Cost effectiveness of CAMUs make them still appealing to people.

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CAMU Expert Telephone Contact Form - Expert #3

General Information

Expert (Region):	Leo Romanowski and Lael Butler (Region 4)
Phone Number:	404-562-8485
HQ Personnel:	Paul Balserak
	Hugh Davis
Date/Time of Call:	March 24, 2000, 9:00 (Length of Call: 1 ½ hours)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* Overall, thinks this will be a minor disincentive to CAMU use. The first two components are already supplied, but the third regarding timing of land disposal restrictions is not.
* Thinks that there would be "about 4 hours per CAMU at a few sites" for owner or operator and "about 2 hours per CAMU at a few sites" for region/state to review.
* Would reduce the time required if had done an RFA back in 1980s.

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* They do not think that these requirements will add anything. Many facilities already deal with hot spots by sending them off-site anyway. No change in timing.

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Treatment standards overall not a big deal. In fact, could help. You only have to treat PHCs, so you don't have to treat all those less significant weirder constituents out there.
* The adjustment factors really seem reasonable. This is reasonable stuff which any competent manager would have to address at a site. This even the case with adjustment factor E! No added costs/time overall.

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* For adjustment factor A, see above discussion.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* For adjustment factor B, see above discussion.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For adjustment factor C, see above discussion.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, see above discussion.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* For adjustment factor E(1), see above discussion.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* For adjustment factor E(2), see above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Liner - no incremental increase in costs.
* Cap - no added costs.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* No answer given because they are unfamiliar with the staging pile regulations upon which this provision is based.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* Not appreciably affect the length of the of approval time for CAMUs.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* They are not seeing a lot of CAMU usage currently. Don't expect that it will change much.

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CAMU Expert Telephone Contact Form - Expert #4

General Information

Expert (Region):	Barry Tornick (Region 2)
Phone Number:	212-637-4169
HQ Personnel:	Paul Balserak
	Hugh Davis
Date/Time of Call:	April 6, 2000, 8:30 (Length of Call: 1 hour)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* Overall, thinks these provisions will result in more analysis as it is a more complicated process.

* For owner or operator, thinks it will add "one week man time" and for region it will add a few days (2 to 3 days). This estimate would be less at less complex sites.

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* His experience is that there has not been any significant process to date associated with identifying constituents. Therefore, he thinks that this provision will add 1-2 days for regional review, but none for the owner or operator.

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* His experience is that it took some real time to negotiate what kind of treatment would be used, and the overall remedy for the site. Now under the new standards you'd be able to point to a standard. Overall for the treatment standards he thinks it would reduce time!

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* For adjustment factor A, he did essentially this, used technical impracticability, for one of the existing CAMUs in the region. Thinks this would help by reducing the negotiating time, etc.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* For adjustment factor B, nothing to add here.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For adjustment factor C, see discussion under adjustment factor E below.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, see discussion under adjustment factor E below.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* For adjustment factors overall - E(1) and (2) are the most subjective. Therefore, it could add negotiating time to the remedy. Owner or operator may spend more time putting reports in the right format, etc.

* Thinks that owner or operator - add 2 to 4 days, for the regional review - add 2 days. These estimates are for adjustment factor E, but really cover all use of adjustment factors.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* For adjustment factor E(2), see above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Liner - would save time, in that would reduce negotiation time. Also, for Region 2, these standards are essentially less stringent then what they currently have been employing.
* Cap - No change at all for these standards.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* Likely less time due to aid of process, but doesn't have a good feel for the staging pile regulations.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* Overall, would make it easier for them, so would reduce time overall.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* Thinks it might increase the use of CAMUs in that it would reduce the uncertainty associated with what a CAMU remedy would be. Although, not positive, given that the optics of having a treatment requirement in place might scare people away.

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CAMU Expert Telephone Contact Form - Expert #5

General Information

Expert (State):	Mark Gordon (State WI)
Phone Number:	608-266-7278
HQ Personnel:	Paul Balserak
Date/Time of Call:	June 8, 2000, 4:00 (Length of Call: 1 hour)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* Overall, do not think that this is a big deal at all. They already provide this as standard information for CAMU approval.

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* Has problems with whether this provision wouldn't end up identifying a lot more constituents than would normally be identified.

* Thinks that this provision might result in additional work over and above what they do now, in that there would be greater inclusiveness required regarding constituents which currently may have simply been screened out via the remediation goals at the site.

* Thinks that the owner/operator would have additional work and the state would require additional review time. Total additional time would be "a few days to a few weeks."

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Treatment standards overall not a big deal. The adjustment factors mirror pretty well the kinds of considerations that occur in CAMU now.
* However, he thinks that there will be significantly more report writing/justification required to use such considerations. "In general, it will result in fairly significant amounts of time for Rps to justify alternatives and do agency review, or make them throw up their hands and not use CAMUs."
* Thinks that for temporary CAMUs there wouldn't be so many problems.
* Thinks that these additional justifications may even require an owner or operator to wait through an additional winter due to the prolongation of the time justifying the CAMU approach.
* Overall for treatment and adjustment factors thinks it will add "weeks to months."

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* For adjustment factor A, burden included in above estimate.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* For adjustment factor B, burden included in above estimate.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For adjustment factor C, burden included in above estimate.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, burden included in above estimate.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* For adjustment factor E(1), burden included in above estimate.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* For adjustment factor E(2), burden included in above estimate.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Overall thinks that from a timing standpoint these requirements are fairly straightforward. They are generally employed often at CAMU sites.
* Again, the potentially important change here is the review question. If someone proposes an alternate liner/cap, what kind of justification will be required?
* "Maybe at some sites, these standards will add days to weeks."

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* Gave no response to this question due to lack of familiarity with the staging pile regulations.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* Might increase approval time due to justifications required for the alternate approaches, etc.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* Thinks that the treatment requirements might cause a decrease in the use of CAMUs.
* Thinks also that there may be a rush due to the grandfathering provisions.

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CAMU Expert Telephone Contact Form - Expert #6

General Information

Expert (Region):	Rich Nussbaum and Rob Morrison (State MO)
Phone Number:	573-751-3553
HQ Personnel:	Paul Balserak
Date/Time of Call:	May 9, 2001, 11:00 (Length of Call: 1 ½ hours)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* No major time impacts here. RFAs and RFIs generally include this information. The Amendments could actually speed things up a bit in making the information requirements clearer.

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* The requirements don't mention dermal contact, nor address other issues related to the identification process.

* Long list of chemicals ... this may result in lots of arguing about which are in and which are out. Could add "weeks to months" for the facility, and "1 to 2 person weeks" of review time for the regulator, especially where it impacts the type of treatment conducted.

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Treatment standards may have impacts on whether a pilot study is done, etc. These requirements may also add a new layer of work at the front end of the remedial decision regarding a CAMU.
* For the facility, may add "2 to 4 months" to approximately 2/3rds of the CAMUs.
* For the regulatory, may add "2 to 3 person weeks" for more technical review at these 2/3rds of the CAMUs.

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* A technical impracticability demonstration might be pretty difficult. Sometimes costs are a consideration, which they think might add to the time requirements here.
* Overall, the facility may have an additional "2 to 4 weeks" for about 10 to 15 percent of the CAMUs.
* For regulators, this adjustment factor may add "1 to 2 person weeks" for about 10 to 15 percent of the CAMUs.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* Facilities may have a good argument here in cases that you could be way less stringent than would be under the new treatment standards. They think this adjustment factor may get frequent use, and could be a valuable tool for facilities.
* This one is the most difficult to quantify. They think this factor could become a real loop-hole for the Amendments.
* The facility may spend an additional "2 to 4 weeks" for 3/4ths of the CAMUs.
* The regulatory may spend an additional "1 to 2 weeks" to review for 3/4ths of the CAMUs.

These estimates are very dependent on how this factor ends up being used.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For adjustment factor C, no new burden

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, no new burden.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* In a way, this factor makes the goal of the cleanup "risk reduction" rather than meeting the treatment standards.
* For adjustment factor E in total, the facility would likely spend "1 additional month" and the regulator would likely spend "1 to 3 weeks" depending on the level of complexity of the site. However, they were not prepared to estimate the percentage of sites that would use this factor.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* See above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Liner standards - apply only for new units or lateral-expansion of an existing unit. The facility may spend an additional "2 to 4 weeks" and the regulator an additional "1 to 2 weeks" and this might be at approximately 25 percent of the sites.
* The extra costs here may end up driving people away from use CAMUs.
* Cap standards - No new burden added here, this is a routine aspect of CAMUs.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* Ultimately, this these standards add no/negligible new costs.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* CAMU approval runs approximately 180 days, may add an additional 90 days to the process. So, the general rule here is it would increase by ½ the time that it takes to approve a CAMU.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* CAMU usage will decrease due to additional technical requirements. This could result in greater use of AOCs. However, if facilities notice the use of adjustment factor B as a way to lessen the stringency of the Amendments, could see more CAMUs.

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CAMU Expert Telephone Contact Form - Expert #7

General Information

Expert (Region):	Katherine Nelson and Linn Bell (State TX)
Phone Number:	512-239-6622
HQ Personnel:	Paul Balserak
Date/Time of Call:	May 16, 2001, 2:00 (Length of Call: 1 hour)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* These requirements may actually save time. Usually, we get very broad and vague information on wastes to go into a CAMU. This might serve to remedy that.
* For the facility, it might add "1 week" to get the information together. For the regulator, it might save "3-4 days."

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* Sites are pretty good at essentially identifying the important constituents at the site, but these requirements may help facilities and regulators by identifying a process.
* For the facility, however, it still will add approximately "2 days - 1 week."

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Will entail more work on the facility's part. They'll have to be more proactive and forward thinking in developing their CAMUs. Overall, they think it is a good idea to have national minimum standards for treatment.
* For the facility, may add approximately "3 weeks."
* For the regulatory, may add "0 days to 1 week."

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* Will likely be applied very much in a site-specific manner.
* Overall, the facility may have an additional "2 weeks" for about 30 percent of the CAMUs.
* For regulators, this adjustment factor may add "3 days to 1 week" for about 30 percent of the CAMUs.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* The facility should add no additional time.
* The regulatory may spend an additional "4 days to 1 week" to review for 33 percent of the CAMUs.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For facilities, may add an additional "1 week" for 10 percent of CAMUs. For regulators, may add an additional "1 to 2 weeks" for 10 percent of CAMUs.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For adjustment factor D, no new burden.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* This factor is complex. In the long run could end up saving time.
* For adjustment factor E in total, the facility would likely spend "2 additional weeks" at 3/4ths

of the CAMUs, and the regulator would likely spend "1-2 weeks" to provide technical review at 3/4ths of the CAMUs.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* See above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* Approximately 60 percent of CAMUs include some sort of liner/cap design.
* The facility may spend an additional "1 to 2 weeks" for 50 percent of CAMUs, and the regulator an additional "1 to 2 weeks" for 50 percent of CAMUs.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* Ultimately, this these standards add no/negligible new costs.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* CAMU approval runs approximately 1-1/2 years to 2-1/2 years for getting the application in the door to getting it out the door.
* The Amendments may result in a decrease in time because there would be standards to point to, and they provide more power to EPA over existing vague standards.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* CAMU usage will likely not change due to CAMU Amendments.
* They've seen a lot of facilities come in because of grandfathering provisions. Also had seen in the past a few facilities scared away by the litigation status of the CAMU rule.

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CAMU Expert Telephone Contact Form - Expert #8

General Information

Expert (Region):	Pete Doorn (State NC)
Phone Number:	919-733-2178
HQ Personnel:	Paul Balserak
Date/Time of Call:	May 17, 2001, 2:00 (Length of Call: 3/4 hour)

Context for CAMU Experts

- Support for agency actions, must comply with Executive Orders.
- Uniqueness of CAMU rule (time frame and nature of Amendments to existing rule).
- Requires specific knowledge of existing process that Headquarters does not have.
- Expert approach best suited.
- Answer list of questions below.
- Goal is to estimate annual cost increment associated with new rule.
- Expert should answer not just for their specific CAMU(s), but for the general CAMU process in their Region.
- Need estimate of costs to owners or operators and to Region or state personnel.

Questions

1. Please describe/quantify the impacts you anticipate will result from the new *waste eligibility requirements* with regard to how CAMU is currently being implemented?
   - Information submission regarding amended sec. 264.552(d)

* For the facility, this might add "2 weeks" and for the regulator, this might add "1 to 2 days."

2. Please describe/quantify the impacts you anticipate will result from the new requirement to *identify PHCs* with regard to how CAMU is currently being implemented?
   - What kind/how much *additional process costs* are associated with identification of PHCs?

* For the facility, this could add "3-4 days" and for the regulator it could add "3 to 4 days." However, at first there would be a learning curve which could make it more like "20 days" for the regulator for the first few CAMUs.

3. Please describe/quantify the impacts you anticipate will result from the new requirement to *treatment requirements* with regard to how CAMU is currently being implemented?

- Will these standards result in a greater need for pilot studies, and thus increased costs associated with them, to determine whether remedial approach will meet new requirements?

* Relatively no difference here.
* For the facility, may add "1 to 2 weeks" for report preparation.
* For the regulatory, may add "3 to 4 days" for more technical review.

4. Please describe/quantify the use/impacts you anticipate will result from the new requirement to *adjustment factors* with regard to how CAMU is currently being implemented?

A. What kind/how much *additional process costs* are associated with the *technical impracticability (A)* adjustment factor?

* This factor (regarding technical impracticability determinations) is fairly new for North Carolina.
* He was unsure what this might add to the facility's burden, and gave no estimate.
* For regulators, this adjustment factor may add "5 to 10 days." He was not able to provide an estimate of what percentage of CAMUs might use this factor.

B. What kind/how much *additional process costs* are associated with the *change in levels/methods (B)* adjustment factor?

* He was unsure what might add to the facility's burden, and gave no estimate.
* The regulatory may spend an additional "2 to 4 days." He was not able to provide an estimate of what percentage of CAMUs might use this factor.

C. What kind/how much *additional process costs* are associated with the *community input (C)* adjustment factor?

* For the regulator, this might add "1 day." No estimate of the percentage of CAMUs that might use this factor, or of change in burden for facility.

D. What kind/how much *additional process costs* are associated with the *short-term risks (D)* adjustment factor?

* For the regulator, this might add "1 to 3 days." No estimate of the percentage of CAMUs that might use this factor, or of change in burden for facility.

E(1). What kind/how much *additional process costs* are associated with the *long-term protection where treatment substantially met (E(1))* adjustment factor?

* For the regulator, this might add "6 to 8 days." No estimate of the percentage of CAMUs that might use this factor, or of change in burden for facility.
* However, could add "20 or more days" for regulator for the first few CAMUs.

E(2). What kind/how much *additional process costs* are associated with the *long-term protection where cost effective treatment used (E(2))* adjustment factor?

* See above discussion.

5. Please describe/quantify the use/impacts you anticipate will result from the new requirement *design standards (liner and cap)* with regard to how CAMU is currently being implemented?

* For the regulator, this might add "2 to 4 days." No estimate of the percentage of CAMUs that might use this factor, or of change in burden for facility.

6. Please describe/quantify the use/impacts you anticipate will result from the new requirement for *nonpermanent CAMUs* with regard to how CAMU is currently being implemented?

* For the regulator, this might add "1 to 2 days." No estimate of the percentage of CAMUs that might use this factor, or of change in burden for facility.

7. How long, on average, does it take to approve a CAMU from start to finish? Will this time increase appreciably due to the new CAMU rule?

* CAMU approval runs approximately 6 months now, may be more like 1 to 1-1/2 years under new Amendments.

8. Do you think CAMU usage will increase or decrease as a result of this rule?

* CAMU will be less attractive under the Amendments.

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Appendix C: Comparison of the 1993 CAMU Rule and the Final CAMU Amendments*

* Please note that the comparison of the 1993 CAMU Rule and the Final CAMU Amendments has been placed separately in the docket for the CAMU Amendments Final Rule as a redline/strikeout comparison.